NOVARTIS Cipla

WARNING: To be sold by retail on the prescription of specialists in Medicine, Dermatology, Rheumatology and Orthopedics only.

Secukinumab Powder (Lyophilized) for Solution for injection 150 mg/mL

SCAPHO®

1. NAME OF THE MEDICINAL PRODUCT

Secukinumab Powder (Lyophilized) for Solution for injection 150 mg/mL

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each vial of powder contains 150 mg secukinumab. After reconstitution, 1 ml of solution contains 150 mg secukinumab.

Secukinumab is a recombinant fully human monoclonal antibody produced in Chinese Hamster Ovary (CHO) cells.

For the full list of excipients, see section 6.1.

3. PHARMACEUTICAL FORM

Powder for solution for injection

The powder is a white solid lyophilisate.

4. CLINICAL PARTICULARS

4.1 Therapeutic indications

Plaque psoriasis

Scapho is indicated for the treatment of moderate to severe plaque psoriasis in adults who are candidates for systemic therapy.

Psoriatic arthritis

Scapho, alone or in combination with methotrexate (MTX), is indicated for the treatment of active psoriatic arthritis in adult patients when the response to previous disease-modifying anti-rheumatic drug (DMARD) therapy has been inadequate (see section 5.1).

Axial spondyloarthritis (axSpA)

Ankylosing spondylitis *(AS, radiographic axial spondyloarthritis)*

Scapho is indicated for the treatment of active ankylosing spondylitis in adults who have responded inadequately to conventional therapy.

Non-radiographic axial spondyloarthritis (nr-axSpA)

Scapho is indicated for the treatment of active non-radiographic axial spondyloarthritis with objective

signs of inflammation as indicated by elevated C-reactive protein (CRP) and/or magnetic resonance imaging (MRI) evidence in adults who have responded inadequately to non-steroidal anti-inflammatory drugs (NSAIDs).

Hidradenitis suppurativa (HS)

Cosentyx is indicated for the treatment of active moderate to severe hidradenitis suppurativa (acne inversa) in adults with an inadequate response to conventional systemic HS therapy (see section 5.1).

4.2 Posology and method of administration

Scapho is intended for use under the guidance and supervision of a physician experienced in the diagnosis and treatment of conditions for which Scapho is indicated.

Posology

Plaque psoriasis

The recommended dose is 300 mg of secukinumab by subcutaneous injection with initial dosing at weeks 0, 1, 2, 3 and 4, followed by monthly maintenance dosing. Based on clinical response, a maintenance dose of 300 mg every 2 weeks may provide additional benefit for patients with a body weight of 90 kg or higher. Each 300 mg dose is given as two subcutaneous injections of 150 mg.

Hidradenitis suppurativa (HS)
The recommended dose is 300 mg of secukinumab by subcutaneous injection with initial dosing at weeks 0, 1, 2, 3, and 4, followed by monthly maintenance dosing. Based on clinical response, the maintenance dose can be increased to 300 mg every 2 weeks. Each 300 mg dose is given as two subcutaneous injections of 150 mg.

Psoriatic arthritis

For patients with concomitant moderate to severe plaque psoriasis, please refer to adult plaque psoriasis recommendation.
For patients who are anti-TNFα inadequate responders (IR), the recommended dose is 300 mg by subcutaneous injection with initial dosing at weeks 0, 1, 2, 3 and 4, followed by monthly maintenance dosing. Each 300 mg dose is given as two subcutaneous injections of 150 mg.

For other patients, the recommended dose is 150 mg by subcutaneous injection with initial dosing at weeks 0, 1, 2, 3 and 4, followed by monthly maintenance dosing. Based on clinical response, the dose can be increased to 300 mg.

Axial spondyloarthritis (axSpA)

Ankylosing spondylitis (AS, radiographic axial spondyloarthritis)

The recommended dose is 150 mg by subcutaneous injection with initial dosing at weeks 0, 1, 2, 3 and 4, followed by monthly maintenance dosing. Based on clinical response, the dose can be increased to 300 mg. Each 300 mg dose is given as two subcutaneous injections of 150 mg.

Non-radiographic axial spondyloarthritis (nr-axSpA)

The recommended dose is 150 mg by subcutaneous injection with initial dosing at weeks 0, 1, 2, 3 and 4, followed by monthly maintenance dosing.

For all of the above indications, available data suggest that a clinical response is usually achieved within 16 weeks of treatment. Consideration should be given to discontinuing treatment in patients who have shown no response by 16 weeks of treatment. Some patients with an initial partial response may subsequently improve with continued treatment beyond 16 weeks.

Special populations

Elderly patients (aged 65 years and over)
No dose adjustment is required (see section 5.2).

Renal impairment / hepatic impairment
Scapho has not been studied in these patient populations. No dose recommendations can be made.

Paediatric population
The safety and efficacy of Scapho in children below the age of 18 years have not yet been established. No data are available.

Method of administration

Scapho is to be administered by subcutaneous injection. If possible, areas of the skin that show psoriasis should be avoided as injection sites. The powder for solution for injection must be reconstituted before use.

The reconstitution, dose preparation and administration of the powder for solution for injection is to be done by a healthcare professional. For instructions on reconstitution of the medicinal product before administration, see section 6.6

4.3 Contraindications

Hypersensitivity to the active substance or to any of the excipients listed in section 6.1.

Clinically important, active infection, e.g. active tuberculosis (see section 4.4).

4.4 Special warnings and precautions for use

Traceability

In order to improve the traceability of biological medicinal products, the name and the batch number of the administered product should be clearly recorded.

Infections

Secukinumab has the potential to increase the risk of infections. Serious infections have been observed in patients receiving secukinumab in the post-marketing setting. Caution should be exercised when considering the use of secukinumab in patients with a chronic infection or a history of recurrent infection.

Patients should be instructed to seek medical advice if signs or symptoms suggestive of an infection occur. If a patient develops a serious infection, the patient should be closely monitored and secukinumab should not be administered until the infection resolves.

In clinical studies, infections have been observed in patients receiving secukinumab (see section 4.8). Most of these were mild or moderate upper respiratory tract infections such as nasopharyngitis and did not require treatment discontinuation.

Related to the mechanism of action of secukinumab, non-serious mucocutaneous candida infections were more frequently reported for secukinumab than placebo in the psoriasis clinical studies (3.55 per 100 patient years for secukinumab 300 mg versus 1.00 per 100 patient years for placebo) (see section 4.8).

No increased susceptibility to tuberculosis was reported from clinical studies. However, secukinumab should not be given to patients with active tuberculosis. Anti-tuberculosis therapy should be considered prior to initiation of secukinumab in patients with latent tuberculosis.

Inflammatory bowel disease **(including Crohn's disease and ulcerative colitis)**

Cases of new or exacerbations of inflammatory bowel disease have been reported with secukinumab (see section 4.8). Secukinumab is not recommended in patients with inflammatory bowel disease. If a patient develops signs and symptoms of inflammatory bowel disease or experiences an exacerbation of pre-existing inflammatory bowel disease, secukinumab should be discontinued and appropriate medical management should be initiated.

Hypersensitivity reactions

In clinical studies, rare cases of anaphylactic reactions have been observed in patients receiving secukinumab. If an anaphylactic or other serious allergic reactions occur, administration of secukinumab should be discontinued immediately and appropriate therapy initiated.

Vaccinations

Live vaccines should not be given concurrently with secukinumab.

Patients receiving secukinumab may receive concurrent inactivated or non-live vaccinations. In a study, after *meningococcal* and inactivated *influenza* vaccinations, a similar proportion of healthy volunteers treated with 150 mg of secukinumab and those treated with placebo were able to mount an adequate immune response of at least a 4-fold increase in antibody titres to *meningococcal* and *influenza* vaccines. The data suggest that secukinumab does not suppress the humoral immune response to the *meningococcal* or *influenza* vaccines.

Concomitant immunosuppressive therapy

In psoriasis studies, the safety and efficacy of secukinumab in combination with immunosuppressants, including biologics, or phototherapy have not been evaluated. Secukinumab was administered concomitantly with methotrexate (MTX), sulfasalazine and/or corticosteroids in arthritis studies (including in patients with psoriatic arthritis and ankylosing spondylitis). Caution should be exercised when considering concomitant use of other immunosuppressants and secukinumab (see also section 4.5).

4.5 Interaction with other medicinal products and other forms of interaction

Live vaccines should not be given concurrently with secukinumab (see also section 4.4).

In a study in subjects with plaque psoriasis, no interaction was observed between secukinumab and midazolam (CYP3A4 substrate).

No interaction was seen when secukinumab was administered concomitantly with methotrexate (MTX) and/or corticosteroids in arthritis studies (including in patients with psoriatic arthritis and axial spondyloarthritis).

4.6 Fertility, pregnancy and lactation

Women of childbearing potential

Women of childbearing potential should use an effective method of contraception during treatment and for at least 20 weeks after treatment.

Pregnancy

There are no adequate data from the use of secukinumab in pregnant women.

Animal studies do not indicate direct or indirect harmful effects with respect to reproductive toxicity (see section 5.3). As a precautionary measure, it is preferable to avoid the use of Scapho during pregnancy.

Breast-feeding

It is not known whether secukinumab is excreted in human milk. Immunoglobulins are excreted in human milk and it is not known if secukinumab is absorbed systemically after ingestion. Because of the potential for adverse reactions in nursing infants from secukinumab, a decision on whether to discontinue breast-feeding during treatment and up to 20 weeks after treatment or to discontinue therapy with Scapho must be made taking into account the benefit of breast-feeding to the child and the benefit of therapy to the woman.

Fertility

The effect of secukinumab on human fertility has not been evaluated. Animal studies do not indicate direct or indirect harmful effects with respect to fertility.

4.7 Effects on ability to drive and use machines

Scapho has no or negligible influence on the ability to drive and use machines.

4.8 Undesirable effects

Summary of the safety profile

The most frequently reported adverse drug reactions (ADRs) are upper respiratory tract infections (most frequently nasopharyngitis, rhinitis).

Tabulated list of adverse reactions

ADRs from clinical studies and post-marketing reports (Table 1) are listed by MedDRA system organ class. Within each system organ class, the ADRs are ranked by frequency, with the most frequent reactions first. Within each frequency grouping, adverse drug reactions are presented in order of decreasing seriousness. In addition, the corresponding frequency category for each adverse drug reaction is based on the following convention: very common (≥1/10); common (≥1/100 to <1/10); uncommon (≥1/1,000 to <1/100); rare (≥1/10,000 to <1/1,000); very rare (<1/10,000); and not known (cannot be estimated from the available data).

Over 20,000 patients have been treated with secukinumab in blinded and open-label clinical studies in various indications (plaque psoriasis, psoriatic arthritis, axial spondyloarthritis, hidradenitis suppurativa and other autoimmune conditions), representing 34,908 patient years of exposure. Of these, over 14,000 patients were exposed to secukinumab for at least one year. The safety profile of secukinumab is consistent across all indications.

Table 1 List of adverse reactions in clinical studies[1)] and post-marketing experience

System Organ Class	Frequency	Adverse reaction
Infections and infestations	Very common	Upper respiratory tract infections
	Common	Oral herpes
	Uncommon	Oral candidiasis
		Otitis externa
		Lower respiratory tract infections
		Tinea pedis
	Not known	Mucosal and cutaneous candidiasis (including oesophageal candidiasis)
Blood and lymphatic system disorders	Uncommon	Neutropenia
Immune system disorders	Rare	Anaphylactic reactions
Nervous system disorders	Common	Headache
Eye disorders	Uncommon	Conjunctivitis

Respiratory, thoracic and mediastinal disorders	Common	Rhinorrhoea
Gastrointestinal disorders	Common	Diarrhoea
	Common	Nausea
	Uncommon	Inflammatory bowel disease
Skin and subcutaneous tissue disorders	Uncommon	Urticaria
		Dyshidrotic eczema
	Rare	Exfoliative dermatitis[2)]
		Hypersensitivity vasculitis
	Not known	Pyoderma gangrenosum
General disorders and administration site conditions	Common	Fatigue
1) Placebo-controlled clinical studies (phase III) in plaque psoriasis, PsA ,AS, nr-axSpA and HS patients exposed to 300 mg, 150 mg, 75 mg or placebo up to 12 weeks (psoriasis) or 16 weeks (PsA, AS, nr-axSpA and HS) treatment duration 2) Cases were reported in patients with psoriasis diagnosis		

Description of selected adverse reactions

Infections

In the placebo-controlled period of clinical studies in plaque psoriasis (a total of 1,382 patients treated with secukinumab and 694 patients treated with placebo for up to 12 weeks), infections were reported in 28.7% of patients treated with secukinumab compared with 18.9% of patients treated with placebo. The majority of infections consisted of non-serious and mild to moderate upper respiratory tract infections, such as nasopharyngitis, which did not necessitate treatment discontinuation. There was an increase in mucosal or cutaneous candidiasis, consistent with the mechanism of action, but the cases were mild or moderate in severity, non-serious, responsive to standard treatment and did not necessitate treatment discontinuation. Serious infections occurred in 0.14% of patients treated with secukinumab and in 0.3% of patients treated with placebo (see section 4.4).

Over the entire treatment period (a total of 3,430 patients treated with secukinumab for up to 52 weeks for the majority of patients), infections were reported in 47.5% of patients treated with secukinumab (0.9 per patient-year of follow-up). Serious infections were reported in 1.2% of patients treated with secukinumab (0.015 per patient-year of follow-up).

Infection rates observed in psoriatic arthritis and axial spondyloarthritis (ankylosing spondylitis and non-radiographic axial spondyloarthritis) clinical studies were similar to those observed in the psoriasis studies.

Patients with hidradenitis suppurativa are more susceptible to infections. In the placebo-controlled period of clinical studies in hidradenitis suppurativa (a total of 721 patients treated with secukinumab and 363 patients treated with placebo for up to 16 weeks), infections were numerically higher compared to those observed in the psoriasis studies (30.7% of patients treated with secukinumab compared with 31.7% in patients treated with placebo). Most of these were non-serious, mild or moderate in severity and did not require treatment discontinuation or interruption.

Neutropenia

In psoriasis phase IIIclinical studies, neutropenia was more frequently observed with secukinumab than with placebo, but most cases were mild, transient and reversible. Neutropenia <1.0-0.5x10^9/l (CTCAE grade 3) was reported in 18 out of 3,430 (0.5%) patients on secukinumab, with no dose dependence and no temporal relationship to infections in 15 out of 18 cases. There were no reported cases of more

severe neutropenia. Non-serious infections with usual response to standard care and not requiring discontinuation of secukinumab were reported in the remaining 3 cases.

The frequency of neutropenia in psoriatic arthritis, axial spondyloarthritis (ankylosing spondylitis and non-radiographic axial spondyloarthritis) and hidradenitis suppurativa was similar to psoriasis.

Rare cases of neutropenia <0.5x10^9/l (CTCAE grade 4) were reported.

Hypersensitivity reactions

In clinical studies, urticaria and rare cases of anaphylactic reaction to secukinumab were observed (see also section 4.4).

Immunogenicity

In psoriasis, psoriatic arthritis, axial spondyloarthritis (ankylosing spondylitis and non-radiographic axial spondyloarthritis) and hidradenitis suppurativa clinical studies, less than 1% of patients treated with secukinumab developed antibodies to secukinumab up to 52 weeks of treatment. About half of the treatment-emergent anti-drug antibodies were neutralising, but this was not associated with loss of efficacy or pharmacokinetic abnormalities.

Reporting of suspected adverse reactions

Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions via appropriate reporting systems.

4.9 Overdose

Doses up to 30 mg/kg (approximately 2000 to 3000 mg) have been administered intravenously in clinical studies without dose-limiting toxicity. In the event of overdose, it is recommended that the patient be monitored for any signs or symptoms of adverse reactions and appropriate symptomatic treatment be instituted immediately.

5. PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Immunosuppressants, interleukin inhibitors, ATC code: L04AC10

Mechanism of action

Secukinumab is a fully human IgG1/κ monoclonal antibody that selectively binds to and neutralises the proinflammatory cytokine interleukin-17A (IL-17A). Secukinumab works by targeting IL-17A and inhibiting its interaction with the IL-17 receptor, which is expressed on various cell types including keratinocytes. As a result, secukinumab inhibits the release of proinflammatory cytokines, chemokines and mediators of tissue damage and reduces IL-17A-mediated contributions to autoimmune and inflammatory diseases. Clinically relevant levels of secukinumab reach the skin and reduce local inflammatory markers. As a direct consequence treatment with secukinumab reduces erythema, induration and desquamation present in plaque psoriasis lesions.

IL-17A is a naturally occurring cytokine that is involved in normal inflammatory and immune responses. IL-17A plays a key role in the pathogenesis of plaque psoriasis, hidradenitis suppurativa psoriatic arthritis and axial spondyloarthritis (ankylosing spondylitis and non-radiographic axial spondyloarthritis) and is up-regulated in lesional skin in contrast to non-lesional skin of plaque psoriasis patients and in synovial tissue of psoriatic arthritis patients. IL-17A is also upregulated in hidradenitis suppurativa lesions and increased IL-17A serum levels have been observed in affected patients. The frequency of IL-17-producing cells was also significantly higher in the subchondral bone marrow of facet joints from patients with ankylosing spondylitis. Increased numbers of IL-17A producing lymphocytes have also been found in patients with non-radiographic axial spondyloarthritis. Inhibition of IL-17A was shown to be effective in the treatment of ankylosing spondylitis, thus establishing the key role of this cytokine in

axial spondyloarthritis.

Pharmacodynamic effects

Serum levels of total IL-17A (free and secukinumab-bound IL-17A) are initially increased in patients receiving secukinumab. This is followed by a slow decrease due to reduced clearance of secukinumab-bound IL-17A, indicating that secukinumab selectively captures free IL-17A, which plays a key role in the pathogenesis of plaque psoriasis.

In a study with secukinumab, infiltrating epidermal neutrophils and various neutrophil-associated markers that are increased in lesional skin of plaque psoriasis patients were significantly reduced after one to two weeks of treatment.

Secukinumab has been shown to lower (within 1 to 2 weeks of treatment) levels of C-reactive protein, which is a marker of inflammation.

Clinical efficacy and safety

Plaque psoriasis
The safety and efficacy of secukinumab were assessed in four randomised, double-blind, placebo-controlled phase III studies in patients with moderate to severe plaque psoriasis who were candidates for phototherapy or systemic therapy [ERASURE, FIXTURE, FEATURE, JUNCTURE]. The efficacy and safety of secukinumab 150 mg and 300 mg were evaluated versus either placebo or etanercept. In addition, one study assessed a chronic treatment regimen versus a “retreatment as needed” regimen [SCULPTURE].

Of the 2,403 patients who were included in the placebo-controlled studies, 79% were biologic-naive, 45% were non-biologic failures and 8% were biologic failures (6% were anti-TNF failures, and 2% were anti-p40 failures). Approximately 15 to 25% of patients in phase III studies had psoriatic arthritis (PsA) at baseline.

Psoriasis study 1 (ERASURE) evaluated 738 patients. Patients randomised to secukinumab received 150 mg or 300 mg doses at weeks 0, 1, 2, 3 and 4, followed by the same dose every month. Psoriasis study 2 (FIXTURE) evaluated 1,306 patients. Patients randomised to secukinumab received 150 mg or 300 mg doses at weeks 0, 1, 2, 3 and 4, followed by the same dose every month. Patients randomised to etanercept received 50 mg doses twice per week for 12 weeks followed by 50 mg every week. In both study 1 and study 2, patients randomised to receive placebo who were non-responders at week 12 then crossed over to receive secukinumab (either 150 mg or 300 mg) at weeks 12, 13, 14, and 15, followed by the same dose every month starting at week 16. All patients were followed for up to 52 weeks following first administration of study treatment.

Psoriasis study 5 (SCULPTURE) evaluated 966 patients. All patients received secukinumab 150 mg or 300 mg doses at weeks 0, 1, 2, 3, 4, 8 and 12 and then were randomised to receive either a maintenance regimen of the same dose every month starting at week 12 or a “retreatment as needed” regimen of the same dose. Patients randomised to “retreatment as needed” did not achieve adequate maintenance of response and therefore a fixed monthly maintenance regimen is recommended.

The co-primary endpoints in the placebo and active-controlled studies were the proportion of patients who achieved a PASI 75 response and IGA mod 2011 “clear” or “almost clear” response versus placebo at week 12 (see Tables 2 and 3). The 300 mg dose provided improved skin clearance particularly for “clear” or “almost clear” skin across the efficacy endpoints of PASI 90, PASI 100, and IGA mod 2011 0 or 1 response across all studies with peak effects seen at week 16, therefore this dose is recommended.

Table 2 Summary of PASI 50/75/90/100 & IGA* mod 2011 "clear" or "almost clear" clinical response in psoriasis studies 1, 3 and 4(ERASURE, FEATURE and JUNCTURE)

	Week 12			Week 16		Week 52	
	Placebo	150 mg	300 mg	150 mg	300 mg	150 mg	300 mg
Study 1							
Number of patients	246	244	245	244	245	244	245
PASI 50 response n (%)	22 (8.9%)	203 (83.5%)	222 (90.6%)	212 (87.2%)	224 (91.4%)	187 (77%)	207 (84.5%)
PASI 75 response n (%)	11 (4.5%)	174 (71.6%)**	200 (81.6%)**	188 (77.4%)	211 (86.1%)	146 (60.1%)	182 (74.3%)
PASI 90 response n (%)	3 (1.2%)	95 (39.1%)**	145 (59.2%)**	130 (53.5%)	171 (69.8%)	88 (36.2%)	147 (60.0%)
PASI 100 response n (%)	2 (0.8%)	31 (12.8%)	70 (28.6%)	51 (21.0%)	102 (41.6%)	49 (20.2%)	96 (39.2%)
IGA mod 2011 "clear" or "almost clear" response n (%)	6 (2.40%)	125 (51.2%)**	160 (65.3%)**	142 (58.2%)	180 (73.5%)	101 (41.4%)	148 (60.4%)
Study 3							
Number of patients	59	59	58	-	-	-	-
PASI 50 response n (%)	3 (5.1%)	51 (86.4%)	51 (87.9%)	-	-	-	-
PASI 75 response n (%)	0 (0.0%)	41 (69.5%)**	44 (75.9%)**	-	-	-	-
PASI 90 response n (%)	0 (0.0%)	27 (45.8%)	35 (60.3%)	-	-	-	-
PASI 100 response n (%)	0 (0.0%)	5 (8.5%)	25 (43.1%)	-	-	-	-
IGA mod 2011 "clear" or "almost clear" response n (%)	0 (0.0%)	31 (52.5%)**	40 (69.0%)**	-	-	-	-
Study 4							
Number of patients	61	60	60	-	-	-	-
PASI 50 response n (%)	5 (8.2%)	48 (80.0%)	58 (96.7%)	-	-	-	-
PASI 75 response n (%)	2 (3.3%)	43 (71.7%)**	52 (86.7%)**	-	-	-	-
PASI 90 response n (%)	0 (0.0%)	24 (40.0%)	33 (55.0%)	-	-	-	-
PASI 100 response n(%)	0 (0.0%)	10 (16.7%)	16 (26.7%)	-	-	-	-
IGA mod 2011 "clear" or "almost clear" response n (%)	0 (0.0%)	32 (53.3%)**	44 (73.3%)**	-	-	-	-

* The IGA mod 2011 is a 5-category scale including "0 = clear", "1 = almost clear", "2 = mild", "3 = moderate" or "4 = severe", indicating the physician's overall assessment of the psoriasis severity focusing on induration, erythema and scaling. Treatment success of "clear" or "almost clear" consisted of no signs of psoriasis or normal to pink colouration of lesions, no thickening of the plaque and none to minimal focal scaling.
** p values versus placebo and adjusted for multiplicity: $p<0.0001$.

Table 3 Summary of clinical response on psoriasis study 2 (FIXTURE)

	Week 12				Week 16			Week 52		
	Placebo	**150 mg**	**300 mg**	**Etanercept**	**150 mg**	**300 mg**	**Etanercept**	**150 mg**	**300 mg**	**Etanercept**
Number of patients	324	327	323	323	327	323	323	327	323	323
PASI 50 response n (%)	49 (15.1%)	266 (81.3%)	296 (91.6%)	226 (70.0%)	290 (88.7%)	302 (93.5%)	257 (79.6%)	249 (76.1%)	274 (84.8%)	234 (72.4%)
PASI 75 response n (%)	16 (4.9%)	219 (67.0%)**	249 (77.1%)**	142 (44.0%)	247 (75.5%)	280 (86.7%)	189 (58.5%)	215 (65.7%)	254 (78.6%)	179 (55.4%)
PASI 90 response n (%)	5 (1.5%)	137 (41.9%)	175 (54.2%)	67 (20.7%)	176 (53.8%)	234 (72.4%)	101 (31.3%)	147 (45.0%)	210 (65.0%)	108 (33.4%)
PASI 100 response n (%)	0 (0%)	47 (14.4%)	78 (24.1%)	14 (4.3%)	84 (25.7%)	119 (36.8%)	24 (7.4%)	65 (19.9%)	117 (36.2%)	32 (9.9%)
IGA mod 2011 “clear” or “almost clear” response n (%)	9 (2.8%)	167 (51.1%)**	202 (62.5%)**	88 (27.2%)	200 (61.2%)	244 (75.5%)	127 (39.3%)	168 (51.4%)	219 (67.8%)	120 (37.2%)

** p values versus etanercept: p=0.0250

In an additional psoriasis study (CLEAR), 676 patients were evaluated. Secukinumab 300 mg met the primary and secondary endpoints by showing superiority to ustekinumab based on PASI 90 response at week 16 (primary endpoint), speed of onset of PASI 75 response at week 4, and long-term PASI 90 response at week 52. Greater efficacy of secukinumab compared to ustekinumab for the endpoints PASI 75/90/100 and IGA mod 2011 0 or 1 response (“clear” or “almost clear”) was observed early and continued through to week 52.

Table 4 Summary of clinical response on CLEAR study

	Week 4		Week 16		Week 52	
	Secukinumab 300 mg	**Ustekinumab ***	**Secukinumab 300 mg**	**Ustekinumab ***	**Secukinumab 300 mg**	**Ustekinumab ***
Number of patients	334	335	334	335	334	335
PASI 75 response n (%)	166 (49.7%)**	69 (20.6%)	311 (93.1%)	276 (82.4%)	306 (91.6%)	262 (78.2%)
PASI 90 response n (%)	70 (21.0%)	18 (5.4%)	264 (79.0%)**	192 (57.3%)	250 (74.9%)***	203 (60.6%)
PASI 100 response n (%)	14 (4.2%)	3 (0.9%)	148 (44.3%)	95 (28.4%)	150 (44.9%)	123 (36.7%)
IGA mod 2011 “clear” or “almost clear” response n (%)	128 (38.3%)	41 (12.2%)	278 (83.2%)	226 (67.5%)	261 (78.1%)	213 (63.6%)

* Patients treated with secukinumab received 300 mg doses at weeks 0, 1, 2, 3 and 4, followed by the same dose every 4 weeks until week 52. Patients treated with ustekinumab received 45 mg or 90 mg at weeks 0 and 4, then every 12 weeks until week 52 (dosed by weight as per approved posology)

** p values versus ustekinumab: p<0.0001 for primary endpoint of PASI 90 at week 16 and secondary endpoint of PASI 75 at week 4

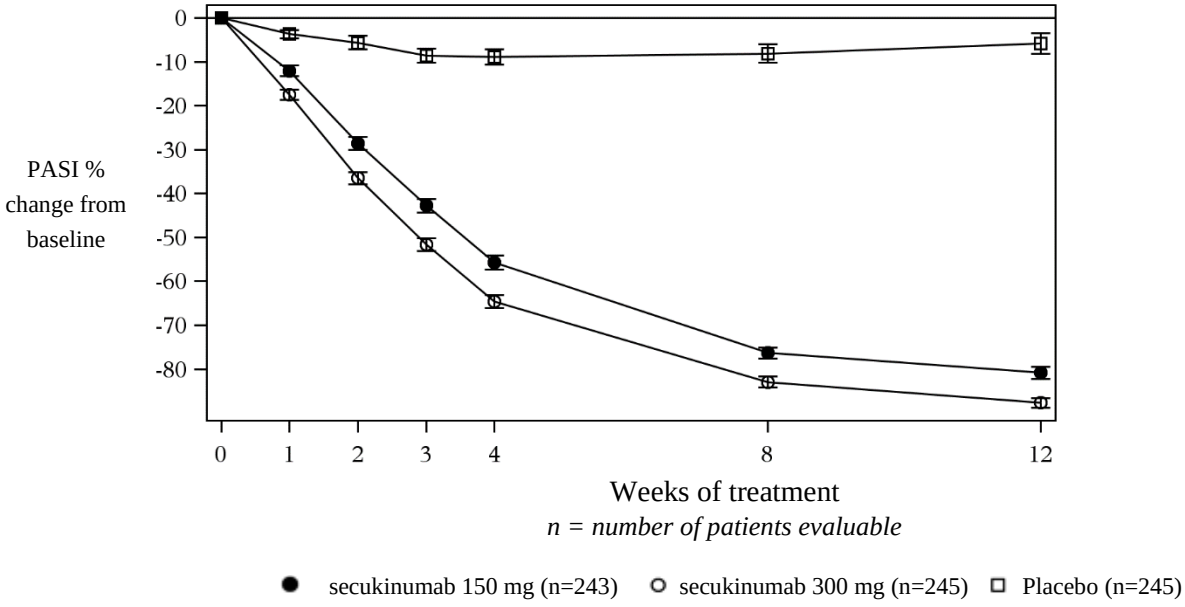
*** p values versus ustekinumab: p=0.0001 for secondary endpoint of PASI 90 at week 52

Secukinumab was efficacious in systemic treatment-naive, biologic-naive, biologic/anti-TNF-exposed and biologic/anti-TNF-failure patients. Improvements in PASI 75 in patients with concurrent psoriatic arthritis at baseline were similar to those in the overall plaque psoriasis population.

Secukinumab was associated with a fast onset of efficacy with a 50% reduction in mean PASI by week 3

for the 300 mg dose.

Figure 1 Time course of percentage change from baseline of mean PASI score in study 1 (ERASURE)



Specific locations/forms of plaque psoriasis
In two additional placebo-controlled studies, improvement was seen in both nail psoriasis (TRANSFIGURE, 198 patients) and palmoplantar plaque psoriasis (GESTURE, 205 patients). In the TRANSFIGURE study, secukinumab was superior to placebo at week 16 (46.1% for 300 mg, 38.4% for 150 mg and 11.7% for placebo) as assessed by significant improvement from baseline in the Nail Psoriasis Severity Index (NAPSI %) for patients with moderate to severe plaque psoriasis with nail involvement. In the GESTURE study, secukinumab was superior to placebo at week 16 (33.3% for 300 mg, 22.1% for 150 mg, and 1.5% for placebo) as assessed by significant improvement of ppIGA 0 or 1 response ("clear" or "almost clear") for patients with moderate to severe palmoplantar plaque psoriasis.

A placebo-controlled study evaluated 102 patients with moderate to severe scalp psoriasis, defined as having a Psoriasis Scalp Severity Index (PSSI) score of ≥12, an IGA mod 2011 scalp only score of 3 or greater and at least 30% of the scalp surface area affected. Secukinumab 300 mg was superior to placebo at week 12 as assessed by significant improvement from baseline in both the PSSI 90 response (52.9% versus 2.0%) and IGA mod 2011 0 or 1 scalp only response (56.9% versus 5.9%). Improvement in both endpoints was sustained for secukinumab patients who continued treatment through to week 24.

Quality of life/patient-reported outcomes
Statistically significant improvements at week 12 (studies 1-4) from baseline compared to placebo were demonstrated in the DLQI (Dermatology Life Quality Index). Mean decreases (improvements) in DLQI from baseline ranged from -10.4 to -11.6 with secukinumab 300 mg, from -7.7 to -10.1 with secukinumab 150 mg, versus -1.1 to -1.9 for placebo at week 12. These improvements were maintained for 52 weeks (studies 1 and 2).

Forty percent of the participants in studies 1 and 2 completed the Psoriasis Symptom Diary©. For the participants completing the diary in each of these studies, statistically significant improvements at week 12 from baseline compared to placebo in patient-reported signs and symptoms of itching, pain and scaling were demonstrated.

Statistically significant improvements at week 4 from baseline in patients treated with secukinumab compared to patients treated with ustekinumab (CLEAR) were demonstrated in the DLQI and these improvements were maintained for up to 52 weeks.

Statistically significant improvements in patient-reported signs and symptoms of itching, pain and scaling at week 16 and week 52 (CLEAR) were demonstrated in the Psoriasis Symptom Diary© in patients treated with secukinumab compared to patients treated with ustekinumab.

Statistically significant improvements (decreases) at week 12 from baseline in the scalp psoriasis study were demonstrated in patient reported signs and symptoms of scalp itching, pain and scaling compared to placebo.

Plaque psoriasis dose flexibility
A randomised, double-blind, multicentre study evaluated two maintenance dosing regimens (300 mg every 2 weeks [Q2W] and 300 mg every 4 weeks [Q4W]) administered by 150 mg pre-filled syringe in 331 patients weighing ≥90 kg with moderate to severe psoriasis. Patients were randomised 1:1 as follows:

- secukinumab 300 mg at weeks 0, 1, 2, 3, and 4 followed by the same dose every 2 weeks (Q2W) up to week 52 (n=165).
- secukinumab 300 mg at weeks 0, 1, 2, 3, and 4 followed by the same dose every 4 weeks (Q4W) up to week 16 (n=166).
    - Patients randomised to receive secukinumab 300 mg Q4W who were PASI 90 responders at week 16 continued to receive the same dosing regimen up to week 52. Patients randomised to receive secukinumab 300 mg Q4W who were PASI 90 non-responders at week 16 either continued on the same dosing regimen, or were reassigned to receive secukinumab 300 mg Q2W up to week 52.

Overall, the efficacy response rates for the group treated with the every 2 weeks regimen were higher compared to the group treated with the every 4 weeks regimen (Table 5).

Table 5 Summary of clinical response in the plaque psoriasis dose flexibility study*

	Week 16		**Week 52**	
	secukinumab 300 mg Q2W	**secukinumab 300 mg Q4W**	**secukinumab 300 mg Q2W**	**secukinumab 300 mg Q4W**[1]
Number of patients	165	166	165	83
PASI 90 response n (%)	121 (73.2%) **	92 (55.5%)	126 (76.4%)	44 (52.4%)
IGA mod 2011 "clear" or "almost clear" response n (%)	122 (74.2%)[2]	109 (65.9%)[2]	125 (75.9%)	46 (55.6%)

* Multiple imputation
[1] 300 mg Q4W:patients continuously treated with 300 mg Q4W regardless of PASI 90 response status at week 16; 43 patients were PASI 90 responder at week 16 and 40 patients were PASI 90 non-responders at week 16
** One sided p value = 0.0003 for primary endpoint of PASI 90 at week 16
[2] Not statistically significant

In the PASI 90 non-responders at week 16 who were up-titrated to secukinumab 300 mg Q2W, the PASI 90 response rates improved compared to those who remained on the secukinumab 300 mg Q4W dosing regimen, while the IGA mod 2011 0/1 response rates remained stable over time in both treatment groups.

The safety profiles of the two dosing regimens, secukinumab 300 mg administered every 4 weeks and secukinumab 300 mg administered every 2 weeks, in patients weighing ≥90 kg were comparable and consistent with the safety profile reported in psoriasis patients.

Hidradenitis suppurativa
The safety and efficacy of secukinumab were assessed in 1 084 patients in two randomised, double-blind, placebo-controlled phase III studies in adult patients with moderate to severe hidradenitis suppurativa (HS) who were candidates for systemic biologic therapy. Patients were required to have at least five inflammatory lesions affecting at least two anatomical areas at baseline. In HS study 1 (SUNSHINE) and HS study 2 (SUNRISE), respectively, 4.6% and 2.8% of patients were Hurley stage I, 61.4% and 56.7% were Hurley stage II, and 34.0% and 40.5% were Hurley stage III.The proportion of patients weighing ≥90 kg was 54.7% in HS study 1 and 50.8% in HS

study 2. Patients in these studies had a diagnosis of moderate to severe HS for a mean of 7.3 years and 56.3% of the study participants were female.

In HS study 1 and HS study 2, 23,8% and 23,2% of patients, respectively, were previously treated with a biologic. 82.3% and 83.6% of patients, respectively, were previously treated with systemic antibiotics.

HS study 1 evaluated 541 patients and HS study 2 evaluated 543 patients, of whom 12.8% and 10.7%, respectively, received concomitant stable-dose antibiotics. In both studies, patients randomised to secukinumab received 300 mg subcutaneously at weeks 0, 1, 2, 3 and 4, followed by 300 mg every 2 weeks (Q2W) or every 4 weeks (Q4W). At week 16, patients who were randomised to placebo were reassigned to receive secukinumab 300 mg at weeks 16, 17, 18, 19 and 20 followed by either secukinumab 300 mg Q2W or secukinumab 300 mg Q4W.

The primary endpoint in both studies (HS study 1 and HS study 2) was the proportion of patients achieving a Hidradenitis Suppurativa Clinical Response defined as at least a 50% decrease in abscesses and inflammatory nodules count with no increase in the number of abscesses and/or in the number of draining fistulae relative to baseline (HiSCR50) at week 16. Reduction in HS-related skin pain was assessed as a secondary endpoint on the pooled data of HS study 1 and HS study 2 using a Numerical Rating Scale (NRS) in patients who entered the studies with an initial baseline score of 3 or greater.

In HS study 1 and HS study 2, a higher proportion of patients treated with secukinumab 300 mg Q2W achieved a HiSCR50 response with a decrease in abscesses and inflammatory nodules (AN) count compared to placebo at week 16. In HS study 2, a difference in HiSCR50 response and AN count was also observed with the secukinumab 300 mg Q4W regimen. In the secukinumab 300 mg Q2W group in HS study 1 and in the secukinumab 300 mg Q4W group in HS study 2, a lower rate of patients experienced flares compared to placebo up to week 16. A higher proportion of patients treated with secukinumab 300 mg Q2W (pooled data) experienced a clinically relevant decrease in HS-related skin pain compared to placebo at week 16 (Table 6).

Table 6 Clinical response in HS study 1 and HS study 2 at week 16[1]

	HS study 1			HS study 2		
	Placebo	300 mg Q4W	300 mg Q2W	Placebo	300 mg Q4W	300 mg Q2W
Number of patients randomised	180	180	181	183	180	180
HiSCR50, n (%)	61 (33.7)	75 (41.8)	82 (45.0*)	57 (31.2)	83 (46.1*)	76 (42.3*)
AN count, mean % change from baseline	-24.3	-42.4	-46.8*	-22.4	-45.5*	-39.3*
Flares, n (%)	52 (29.0)	42 (23.2)	28 (15.4*)	50 (27.0)	28 (15.6*)	36 (20.1)
	Pooled data (HS study 1 and HS study 2)					
	Placebo		300 mg Q4W		300 mg Q2W	
Number of patients with NRS ≥3 at baseline	251		252		266	
≥30% reduction in skin pain, NRS30 response, n (%)	58 (23.0)		84 (33.5)		97 (36.6*)	

[1] Multiple imputation was implemented to handle missing data
n: Rounded average number of subjects with responses in 100 imputations
*Statistically significant versus placebo based on the pre-defined hierarchy with overall alpha=0.05
AN: Abscesses and inflammatory Nodules; HiSCR: Hidradenitis Suppurativa Clinical Response; NRS: Numerical Rating Scale

In both studies, the onset of action of secukinumab occurred as early as week 2, the efficacy progressively increased to week 16 and was maintained up to week 52.

Improvements were seen for the primary and key secondary endpoints in HS patients regardless of previous or concomitant antibiotic treatment.

HiSCR50 responses were improved at week 16 in both biologic-naïve and biologic-exposed patients.

Greater improvements at week 16 from baseline compared to placebo were demonstrated in health-related quality of life as measured by the Dermatology Life Quality Index.

Psoriatic arthritis

The safety and efficacy of secukinumab were assessed in 1,999 patients in three randomised, double-blind, placebo-controlled phase III studies in patients with active psoriatic arthritis (≥3 swollen and ≥3 tender joints) despite non-steroidal anti-inflammatory drug (NSAID), corticosteroid or disease-modifying anti-rheumatic drug (DMARD) therapy. Patients with each subtype of PsA were enrolled in these studies, including polyarticular arthritis with no evidence of rheumatoid nodules, spondylitis with peripheral arthritis, asymmetric peripheral arthritis, distal interphalangeal involvement and arthritis mutilans. Patients in these studies had a diagnosis of PsA of at least five years. The majority of patients also had active psoriasis skin lesions or a documented history of psoriasis. Over 61% and 42% of the PsA patients had enthesitis and dactylitis at baseline, respectively. For all studies, the primary endpoint was American College of Rheumatology (ACR) 20 response. For Psoriatic Arthritis study 1 (PsA study 1) and Psoriatic Arthritis study 2 (PsA study 2), the primary endpoint was at week 24. For Psoriatic Arthritis study 3 (PsA study 3), the primary endpoint was at week 16 with the key secondary endpoint, the change from baseline in modified Total Sharp Score (mTSS), at week 24.

In PsA study 1, PsA study 2 and PsA study 3, 29%, 35% and 30% of patients, respectively, were previously treated with an anti-TNFα agent and discontinued the anti-TNFα agent for either lack of efficacy or intolerance (anti-TNFα-IR patients).

PsA study 1 (FUTURE 1) evaluated 606 patients, of whom 60.7% had concomitant MTX. Patients

randomised to secukinumab received 10 mg/kg intravenously at weeks 0, 2, and 4, followed by either 75 mg or 150 mg subcutaneously every month starting at week 8. Patients randomised to placebo who were non-responders at week 16 (early rescue) and other placebo patients at week 24 were crossed over to receive secukinumab (either 75 mg or 150 mg subcutaneously) followed by the same dose every month.

PsA study 2 (FUTURE 2) evaluated 397 patients, of whom 46.6% had concomitant MTX. Patients randomised to secukinumab received 75 mg, 150 mg or 300 mg subcutaneously at weeks 0, 1, 2, 3 and 4, followed by the same dose every month. Patients randomised to receive placebo who were non-responders at week 16 (early rescue) were crossed over to receive secukinumab (either 150 mg or 300 mg subcutaneously) at week 16 followed by the same dose every month. Patients randomised to receive placebo who were responders at week 16 were crossed over to receive secukinumab (either 150 mg or 300 mg subcutaneously) at week 24 followed by the same dose every month.

PsA study 3 (FUTURE 5) evaluated 996 patients, of whom 50.1% had concomitant MTX. Patients were randomised to receive secukinumab 150 mg, 300 mg or placebo subcutaneously at weeks 0, 1, 2, 3 and 4, followed by the same dose every month, or a once monthly injection of secukinumab 150 mg (without loading). Patients randomised to receive placebo who were non-responders at week 16 (early rescue) were then crossed over to receive secukinumab (either 150 mg or 300 mg subcutaneously) at week 16 followed by the same dose every month. Patients randomised to receive placebo who were responders at week 16 were crossed over to receive secukinumab (either 150 mg or 300 mg subcutaneously) at week 24 followed by the same dose every month.

Signs and symptoms
Treatment with secukinumab resulted in significant improvement in measures of disease activity compared to placebo at weeks 16 and 24 (see Table 7).

Table 7 Clinical response in PsA study 2 and PsA study 3 at week 16 and week 24

	PsA study 2			**PsA study 3**		
	Placebo	150 mg[1]	300 mg[1]	Placebo	150 mg[1]	300 mg[1]
Number of patients randomised	98	100	100	332	220	222
ACR20 response n (%)						
Week 16	18 (18.4%)	60 (60.0%***)	57 (57.0%***)	91◊ (27.4%)	122◊ (55.5%***)	139◊ (62.6%***)
Week 24	15◊ (15.3%)	51◊ (51.0%***)	54◊ (54.0%***)	78 (23.5%)	117 (53.2%***)	141 (63.5%***)
ACR50 response n (%)						
Week 16	6 (6.1%)	37 (37.0%***)	35 (35.0%***)	27 (8.1%)	79 (35.9%*)	88 (39.6%*)
Week 24	7 (7.1%)	35 (35.0%)	35 (35.0%**)	29 (8.7%)	86 (39.1%***)	97 (43.7%***)
ACR70 response n (%)						
Week 16	2 (2.0%)	17 (17.0%**)	15 (15.0%**)	14 (4.2%)	40 (18.2%***)	45 (20.3%***)
Week 24	1 (1.0%)	21 (21.0%**)	20 (20.0%**)	13 (3.9%)	53 (24.1%***)	57 (25.7%***)
DAS28-CRP						
Week 16	-0.50	-1.45***	-1.51***	-0.63	-1.29*	-1.49*
Week 24	-0.96	-1.58**	-1.61**	-0.84	-1.57***	-1.68***
Number of patients with ≥3% BSA psoriasis skin involvement at baseline	43 (43.9%)	58 (58.0%)	41 (41.0%)	162 (48.8%)	125 (56.8%)	110 (49.5%)
PASI 75 response n (%)						
Week 16	3 (7.0%)	33 (56.9%***)	27 (65.9%***)	20 (12.3%)	75 (60.0%*)	77 (70.0%*)
Week 24	7 (16.3%)	28 (48.3%**)	26 (63.4%***)	29 (17.9%)	80 (64.0%***)	78 (70.9%***)

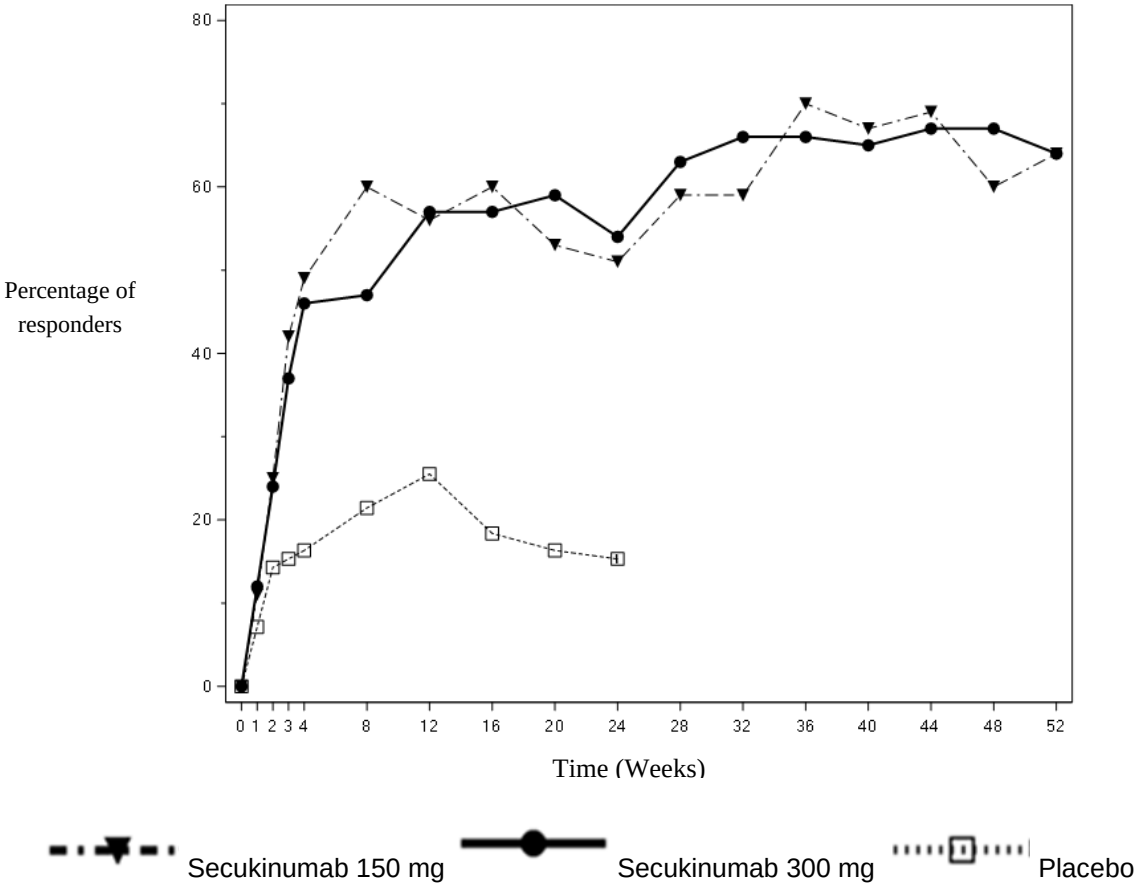
PASI 90 response n (%)						
Week 16	3 (7.0%)	22 (37.9%***)	18 (43.9%***)	15 (9.3%)	46 (36.8%*)	59 (53.6%*)
Week 24	4 (9.3%)	19 (32.8%**)	20 (48.8%***)	19 (11.7%)	51 (40.8%***)	60 (54.5%***)
Dactylitis resolution n (%) †						
Week 16	10 (37%)	21 (65.6%*)	26 (56.5%)	40 (32.3%)	46 (57.5%*)	54 (65.9%*)
Week 24	4 (14.8%)	16 (50.0%**)	26 (56.5%**)	42 (33.9%)	51 (63.8%***)	52 (63.4%***)
Enthesitis resolution n (%) ‡						
Week 16	17 (26.2%)	32 (50.0%**)	32 (57.1%***)	68 (35.4%)	77 (54.6%*)	78 (55.7%*)
Week 24	14 (21.5%)	27 (42.2%*)	27 (48.2%**)	66 (34.4%)	77 (54.6%***)	86 (61.4%***)

* p<0.05, ** p<0.01, *** p<0.001; versus placebo
All p-values are adjusted for multiplicity of testing based on pre-defined hierarchy at week 24 for PsA study 2, except for ACR70, Dactylitis and Enthesitis, which were exploratory endpoints and all endpoints at week 16.
All p-values are adjusted for multiplicity of testing based on pre-defined hierarchy at week 16 for PsA study 3, except for ACR70 which was an exploratory endpoint and all endpoints at week 24.
Non-responder imputation used for missing binary endpoint.
ACR: American College of Rheumatology; PASI: Psoriasis Area and Severity Index; DAS: Disease Activity Score; BSA: Body Surface Area
◊Primary Endpoint
[1]Secukinumab 150 mg or 300 mg s.c. at weeks 0, 1, 2, 3, and 4 followed by the same dose every month
†In patients with dactylitis at baseline (n=27, 32, 46, respectively for PsA study 2 and n=124, 80, 82, respectively for PsA study 3)
‡In patients with enthesitis at baseline (n=65, 64, 56, respectively for PsA study 2 and n=192, 141, 140, respectively for PsA study 3)

The onset of action of secukinumab occurred as early as week 2. Statistically significant difference in ACR 20 versus placebo was reached at week 3.

The percentage of patients achieving ACR 20 response by visit is shown in Figure 2.

Figure 2 ACR20 response in PsA study 2 over time up to week 52



Similar responses for primary and key secondary endpoints were seen in PsA patients regardless of whether they were on concomitant MTX treatment or not. In PsA study 2, at week 24, secukinumab-treated patients with concomitant MTX use had a higher ACR 20 response (47.7% and 54.4% for 150 mg and 300 mg, respectively, compared to placebo 20.0%) and ACR 50 response (31.8% and 38.6% for 150 mg and 300 mg, respectively, compared to placebo 8.0%). Secukinumab-treated patients without concomitant MTX use had a higher ACR 20 response (53.6% and 53.6% for 150 mg and 300 mg, respectively, compared to placebo 10.4%) and ACR 50 response (37.5% and 32.1% for 150 mg and 300 mg, respectively, compared to placebo 6.3%).

In PsA study 2, both anti-TNFα-naive and anti-TNFα-IR secukinumab-treated patients had a significantly higher ACR 20 response compared to placebo at week 24, with a slightly higher response in the anti-TNFα-naive group (anti-TNFα-naive: 64% and 58% for 150 mg and 300 mg, respectively, compared to placebo 15.9%; anti-TNFα-IR: 30% and 46% for 150 mg and 300 mg, respectively, compared to placebo 14.3%). In the anti-TNFα-IR patients subgroup, only the 300 mg dose showed significantly higher response rate for ACR 20 compared to placebo ($p<0.05$) and demonstrated clinical meaningful benefit over 150 mg on multiple secondary endpoints. Improvements in the PASI 75 response were seen in both subgroups and the 300 mg dose showed statistically significant benefit in the anti-TNFα-IR patients.

Improvements were shown in all components of the ACR scores, including patient assessment of pain. In PsA study 2, the proportion of patients achieving a modified PsA Response Criteria (PsARC) response was greater in the secukinumab-treated patients (59.0% and 61.0% for 150 mg and 300 mg, respectively) compared to placebo (26.5%) at week 24.

In PsA study 1 and PsA study 2, efficacy was maintained up to week 104. In PsA study 2, among 200 patients initially randomised to secukinumab 150 mg and 300 mg, 178 (89%) patients were still on treatment at week 52. Of the 100 patients randomised to secukinumab 150 mg, 64, 39 and 20 had an ACR 20/50/70 response, respectively. Of the 100 patients randomised to secukinumab 300 mg, 64, 44

and 24 had an ACR 20/50/70 response, respectively.

Radiographic response
In PsA study 3, inhibition of progression of structural damage was assessed radiographically and expressed by the modified Total Sharp Score (mTSS) and its components, the Erosion Score (ES) and the Joint Space Narrowing Score (JSN). Radiographs of hands, wrists, and feet were obtained at baseline, week 16 and/or week 24 and scored independently by at least two readers who were blinded to treatment group and visit number. Secukinumab 150 mg and 300 mg treatment significantly inhibited the rate of progression of peripheral joint damage compared with placebo treatment as measured by change from baseline in mTSS at week 24 (Table 7).

Inhibition of progression of structural damage was also assessed in PsA study 1 at weeks 24 and 52, compared to baseline. Week 24 data are presented in Table 8.

Table 8 Change in modified Total Sharp Score in psoriatic arthritis

	PsA study 3			**PsA study 1**	
	Placebo n=296	**secukinumab 150 mg[1] n=213**	**secukinumab 300 mg[1] n=217**	**Placebo n=179**	**secukinumab 150 mg[2] n=185**
Total score					
Baseline (SD)	15.0 (38.2)	13.5 (25.6)	12.9 (23.8)	28.4 (63.5)	22.3 (48.0)
Mean change at Week 24	0.50	0.13*	0.02*	0.57	0.13*
*p<0.05 based on nominal, but non adjusted, p-value [1]secukinumab 150 mg or 300 mg s.c. at weeks 0, 1, 2, 3, and 4 followed by the same dose every month [2]10 mg/kg at weeks 0, 2 and 4 followed by subcutaneous doses of 75 mg or 150 mg					

In PsA study 1, inhibition of structural damage was maintained with secukinumab treatment up to week 52.

In PsA study 3, the percentage of patients with no disease progression (defined as a change from baseline in mTSS of ≤0.5) from randomisation to week 24 was 80.3%, 88.5% and 73.6% for secukinumab 150 mg, 300 mg and placebo, respectively. An effect of inhibition of structural damage was observed in anti-TNFα-naïve and anti-TNFα-IR patients and in patients treated with and without concomitant MTX.

In PsA study 1, the percentage of patients with no disease progression (defined as a change from baseline in mTSS of ≤0.5) from randomisation to week 24 was 82.3% in secukinumab 10 mg/kg intravenous load – 150 mg subcutaneous maintenance and 75.7% in placebo. The percentage of patients with no disease progression from week 24 to week 52 for secukinumab 10 mg/kg intravenous load – followed by 150 mg subcutaneous maintenance and for placebo patients who switched to 75 mg or 150 mg subcutaneous every 4 weeks at week 16 or week 24 was 85.7% and 86.8%, respectively.

Axial manifestations in PsA

A randomised, double-blind, placebo-controlled study (MAXIMISE) assessed the efficacy of secukinumab in 485 PsA patients with axial manifestations who were naive to biologic treatment and responded inadequately to NSAIDs. The primary variable of at least a 20% improvement in Assessment of SpondyloArthritis International Society (ASAS 20) criteria at week 12 was met. Treatment with secukinumab 300 mg and 150 mg compared to placebo also resulted in greater improvement in signs and symptoms (including decreases from baseline in spinal pain) and improvement in physical function (see Table 9).

Table 9 Clinical response on MAXIMISE study at week 12

	Placebo (n=164)	150 mg (n=157)	300 mg (n=164)
ASAS 20 response, % (95% CI)	31.2 (24.6, 38.7)	66.3 (58.4, 73.3)*	62.9 (55.2, 70.0)*
ASAS 40 response, % (95% CI)	12.2 (7.8, 18.4)	39.5 (32.1, 47.4)**	43.6 (36.2, 51.3)**
BASDAI 50, % (95% CI)	9.8 (5.9, 15.6)	32.7 (25.8, 40.5)**	37.4 (30.1, 45.4)**
Spinal pain, VAS (95% CI)	-13.6 (-17.2, -10.0)	-28.5 (-32.2, -24.8)**	-26.5 (-30.1, -22.9)**
Physical function, HAQ-DI (95% CI)	-0.155 (-0.224, -0.086)	-0.330 (-0.401, -0.259)**	-0.389 (-0.458, -0.320)**

* p<0.0001; versus placebo using multiple imputation.

** Comparison versus placebo was not adjusted for multiplicity.

ASAS: Assessment of SpondyloArthritis International Society Criteria; BASDAI: Bath Ankylosing Spondylitis Disease Activity Index; VAS: Visual Analog Scale; HAQ-DI: Health Assessment Questionnaire – Disability Index.

Improvement in ASAS 20 and ASAS 40 for both secukinumab doses were observed by week 4 and were maintained up to 52 weeks.

Physical function and health-related quality of life
In PsA study 2 and PsA study 3, patients treated with secukinumab 150 mg (p=0.0555 and p<0.0001) and 300 mg (p=0.0040 and p<0.0001) showed improvement in physical function compared to patients treated with placebo as assessed by Health Assessment Questionnaire-Disability Index (HAQ-DI) at week 24 and week 16, respectively. Improvements in HAQ-DI scores were seen regardless of previous anti-TNFα exposure. Similar responses were seen in PsA study 1.

Secukinumab-treated patients reported significant improvements in health-related quality of life as measured by the Short Form-36 Health Survey Physical Component Summary (SF-36 PCS) score (p<0.001). There were also statistically significant improvements demonstrated in exploratory endpoints assessed by the Functional Assessment of Chronic Illness Therapy – Fatigue (FACIT-F) scores for 150 mg and 300 mg compared to placebo (7.97, 5.97 versus 1.63, respectively) and these improvements were maintained up to week 104 in PsA study 2.

Similar responses were seen in PsA study 1 and efficacy was maintained up to week 52.

Axial spondyloarthritis (axSpA)

Ankylosing spondylitis (AS) / Radiographic axial spondyloarthritis
The safety and efficacy of secukinumab were assessed in 816 patients in three randomised, double-blind, placebo-controlled phase III studies in patients with active ankylosing spondylitis (AS) with a Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) ≥4 despite non-steroidal anti-inflammatory drug (NSAID), corticosteroid or disease-modifying anti-rheumatic drug (DMARD) therapy. Patients in Ankylosing Spondylitis study 1 (AS study 1) and Ankylosing Spondylitis study 2 (AS study 2) had a diagnosis of AS for a median of 2.7 to 5.8 years. For both studies, the primary endpoint was at least a 20% improvement in Assessment of SpondyloArthritis International Society (ASAS 20) criteria at week 16.

In Ankylosing Spondylitis study 1 (AS study 1), Ankylosing Spondylitis study 2 (AS study 2), and Ankylosing Spondylitis study 3 (AS study 3), 27.0%, 38.8%, and 23.5% of patients, respectively, were previously treated with an anti-TNFα agent and discontinued the anti-TNFα agent for either lack of

efficacy or intolerance (anti-TNFα-IR patients).

AS study 1 (MEASURE 1) evaluated 371 patients, of whom 14.8% and 33.4% used concomitant MTX or sulfasalazine, respectively. Patients randomised to secukinumab received 10 mg/kg intravenously at weeks 0, 2, and 4, followed by either 75 mg or 150 mg subcutaneously every month starting at week 8. Patients randomised to placebo who were non-responders at week 16 (early rescue) and all other placebo patients at week 24 were crossed over to receive secukinumab (either 75 mg or 150 mg subcutaneously), followed by the same dose every month.

AS study 2 (MEASURE 2) evaluated 219 patients, of whom 11.9% and 14.2% used concomitant MTX or sulfasalazine, respectively. Patients randomised to secukinumab received 75 mg or 150 mg subcutaneously at weeks 0, 1, 2, 3 and 4, followed by the same dose every month. At week 16, patients who were randomised to placebo at baseline were re-randomised to receive secukinumab (either 75 mg or 150 mg subcutaneously) every month.

AS study 3 (MEASURE 3) evaluated 226 patients, of whom 13.3% and 23.5% used concomitant MTX or sulfasalazine, respectively. Patients randomised to secukinumab received 10 mg/kg intravenously at weeks 0, 2, and 4, followed by either 150 mg or 300 mg subcutaneously every month. At week 16, patients who were randomised to placebo at baseline were re-randomised to receive secukinumab (either 150 mg or 300 mg subcutaneously) every month. The primary endpoint was ASAS 20 at week 16. Patients were blinded to the treatment regimen up to week 52, and the study continued to week 156.

Signs and symptoms:
In AS study 2, treatment with secukinumab 150 mg resulted in greater improvement in measures of disease activity compared with placebo at week 16 (see Table 10).

Table 10 Clinical response in AS study 2 at week 16

Outcome (p-value versus placebo)	**Placebo (n = 74)**	**75 mg (n = 73)**	**150 mg (n = 72)**
ASAS 20 response, %	28.4	41.1	61.1***
ASAS 40 response, %	10.8	26.0	36.1***
hsCRP, (post-BSL/BSL ratio)	1.13	0.61	0.55***
ASAS 5/6, %	8.1	34.2	43.1***
ASAS partial remission, %	4.1	15.1	13.9
BASDAI 50, %	10.8	24.7*	30.6**
ASDAS-CRP major improvement	4.1	15.1*	25.0***

* p<0.05, ** p<0.01, *** p<0.001; versus placebo
All p-values adjusted for multiplicity of testing based on pre-defined hierarchy, except BASDAI 50 and ASDAS-CRP
Non-responder imputation used for missing binary endpoint

ASAS: Assessment of SpondyloArthritis International Society Criteria; BASDAI: Bath Ankylosing Spondylitis Disease Activity Index; hsCRP: high-sensitivity C-reactive protein; ASDAS: Ankylosing Spondylitis Disease Activity Score; BSL: baseline

The onset of action of secukinumab 150 mg occurred as early as week 1 for ASAS 20 and week 2 for ASAS 40 (superior to placebo) in AS study 2.

ASAS 20 responses were improved at week 16 in both anti-TNFα-naïve patients (68.2% versus 31.1%; p<0.05) and anti-TNFα-IR patients (50.0% versus 24.1%; p<0.05) for secukinumab 150 mg compared with placebo, respectively.

In AS study 1 and AS study 2, secukinumab-treated patients (150 mg in AS study 2 and both regimens in AS study 1) demonstrated significantly improved signs and symptoms at week 16, with comparable magnitude of response and efficacy maintained up to week 52 in both anti-TNFα-naive and anti-TNFα-IR

patients. In AS study 2, among 72 patients initially randomised to secukinumab 150 mg, 61 (84.7%) patients were still on treatment at week 52. Of the 72 patients randomised to secukinumab 150 mg, 45 and 35 had an ASAS 20/40 response, respectively.

In AS study 3, patients treated with secukinumab (150 mg and 300 mg) demonstrated improved signs and symptoms, and had comparable efficacy responses regardless of dose that were superior to placebo at week 16 for the primary endpoint (ASAS 20). Overall, the efficacy response rates for the 300 mg group were consistently greater compared to the 150 mg group for the secondary endpoints. During the blinded period, the ASAS 20 and ASAS 40 responses were 69.7% and 47.6% for 150 mg and 74.3% and 57.4% for 300 mg at week 52, respectively. The ASAS 20 and ASAS 40 responses were maintained up to week 156 (69.5% and 47.6% for 150 mg versus 74.8% and 55.6% for 300 mg). Greater response rates favouring 300 mg were also observed for ASAS partial remission (ASAS PR) response at week 16 and were maintained up to week 156. Larger differences in response rates, favouring 300 mg over 150 mg, were observed in anti-TNFα-IR patients (n=36) compared to anti-TNFα-naïve patients (n=114).

Spinal mobility:
Patients treated with secukinumab 150 mg showed improvements in spinal mobility as measured by change from baseline in BASMI at week 16 for both AS study 1 (-0.40 versus -0.12 for placebo; p=0.0114) and AS study 2 (-0.51 versus -0.22 for placebo; p=0.0533). These improvements were sustained up to week 52.

Physical function and health-related quality of life:
In AS study 1 and study 2, patients treated with secukinumab 150 mg showed improvements in health-related quality of life as measured by AS Quality of Life Questionnaire (ASQoL) (p=0.001) and SF-36 Physical Component Summary (SF-36PCS) (p<0.001). Patients treated with secukinumab 150 mg also showed statistically significant improvements on exploratory endpoints in physical function as assessed by the Bath Ankylosing Spondylitis Functional Index (BASFI) compared to placebo (-2.15 versus -0.68), and in fatigue as assessed by the Functional Assessment of Chronic Illness Therapy-Fatigue (FACIT-Fatigue) scale compared to placebo (8.10 versus 3.30). These improvements were sustained up to week 52.

Non-radiographic axial spondyloarthritis (nr-axSpA)
The safety and efficacy of secukinumab were assessed in 555 patients in one randomised, double-blind, placebo-controlled phase III study (PREVENT), consisting of a 2-year core phase and a 2-year extension phase, in patients with active non-radiographic axial spondyloarthritis (nr-axSpA) fulfilling the Assessment of Spondyloarthritis International Society (ASAS) classification criteria for axial spondyloarthritis (axSpA) with no radiographic evidence of changes in the sacroiliac joints that would meet the modified New York criteria for ankylosing spondylitis (AS). Patients enrolled had active disease, defined as a Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) ≥4, a Visual Analogue Scale (VAS) for total back pain of ≥40 (on a scale of 0-100 mm), despite current or previous non-steroidal anti-inflammatory drug (NSAID) therapy and increased C-reactive protein (CRP) and/or evidence of sacroiliitis on Magnetic Resonance Imaging (MRI). Patients in this study had a diagnosis of axSpA for a mean of 2.1 to 3.0 years and 54% of the study participants were female.

In the PREVENT study, 9.7% of patients were previously treated with an anti-TNFα agent and discontinued the anti-TNFα agent for either lack of efficacy or intolerance (anti-TNFα-IR patients).

In the PREVENT study, 9.9% and 14.8% of patients used concomitant MTX or sulfasalazine, respectively. In the double-blind period, patients received either placebo or secukinumab for 52 weeks. Patients randomised to secukinumab received 150 mg subcutaneously at weeks 0, 1, 2, 3 and 4 followed by the same dose every month, or a once monthly injection of secukinumab 150 mg. The primary endpoint was at least 40% improvement in Assessment of Spondyloarthritis International Society (ASAS 40) at Week 16 in anti-TNFα-naive patients.

Signs and symptoms:
In the PREVENT study, treatment with secukinumab 150 mg resulted in significant improvements in the measures of disease activity compared to placebo at week 16. These measures include ASAS 40, ASAS 5/6, BASDAI score, BASDAI 50, high-sensitivity CRP (hsCRP), ASAS 20 and ASAS partial remission response compared to placebo (Table 11). Responses were maintained up to week 52.

Table 11 Clinical response in the PREVENT study at week 16

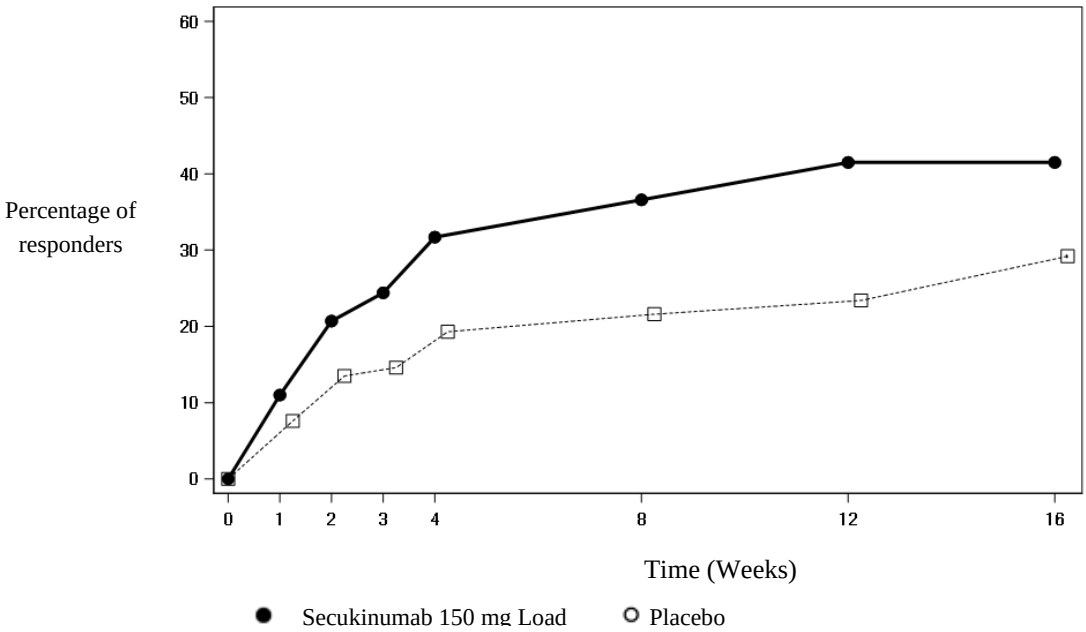
Outcome (p-value versus placebo)	**Placebo**	**150 mg[1]**
Number of anti-TNFα-naive patients randomised	**171**	**164**
ASAS 40 response, %	29.2	41.5*
Total number of patients randomised	**186**	**185**
ASAS 40 response, %	28.0	40.0*
ASAS 5/6, %	23.7	40.0*
BASDAI, LS mean change from baseline score	-1.46	-2.35*
BASDAI 50, %	21.0	37.3*
hsCRP, (post-BSL/BSL ratio)	0.91	0.64*
ASAS 20 response, %	45.7	56.8*
ASAS partial remission, %	7.0	21.6*

*p<0.05 versus placebo
All p-values adjusted for multiplicity of testing based on pre-defined hierarchy
Non-responder imputation used for missing binary endpoint
[1]secukinumab 150 mg s.c. at weeks 0, 1, 2, 3, and 4 followed by the same dose every month

ASAS: Assessment of SpondyloArthritis International Society Criteria; BASDAI: Bath Ankylosing Spondylitis Disease Activity Index; hsCRP: high-sensitivity C-reactive protein; BSL: baseline; LS: Least square

The onset of action of secukinumab 150 mg occurred as early as week 3 for ASAS 40 in anti-TNFα naive patients (superior to placebo) in the PREVENT study. The percentage of patients achieving an ASAS 40 response in anti-TNFα naive patients by visit is shown in Figure 3.

Figure 3 ASAS 40 responses in anti-TNFα naive patients in the PREVENT study over time up to week 16



ASAS 40 responses were also improved at week 16 in anti-TNFα-IR patients for secukinumab 150 mg compared with placebo.

Physical function and health-related quality of life:
Patients treated with secukinumab 150 mg showed statistically significant improvements by week 16 compared to placebo-treated patients in physical function as assessed by the BASFI (week 16: -1.75 versus -1.01, $p<0.05$). Patients treated with secukinumab reported significant improvements compared to placebo-treated patients by week 16 in health-related quality of life as measured by ASQoL (LS mean change: week 16: -3.45 versus -1.84, $p<0.05$) and SF-36 Physical Component Summary (SF-36 PCS) (LS mean change: week 16: 5.71 versus 2.93, $p<0.05$). These improvements were sustained up to week 52.

Spinal mobility:
Spinal mobility was assessed by BASMI up to week 16. Numerically greater improvements were demonstrated in patients treated with secukinumab compared with placebo-treated patients at weeks 4, 8, 12 and 16.

Inhibition of inflammation in magnetic resonance imaging (MRI):
Signs of inflammation were assessed by MRI at baseline and week 16 and expressed as change from baseline in Berlin SI-joint oedema score for sacroiliac joints and ASspiMRI-a score and Berlin spine score for the spine. Inhibition of inflammatory signs in both sacroiliac joints and the spine was observed in patients treated with secukinumab. Mean change from baseline in Berlin SI-joint oedema score was -1.68 for patients treated with secukinumab 150 mg (n=180) versus -0.39 for the placebo-treated patients (n=174) ($p<0.05$).

5.2 Pharmacokinetic properties

Most pharmacokinetics properties observed in patients with plaque psoriasis, psoriatic arthritis and ankylosing spondylitis were similar.

Absorption

Following a single subcutaneous dose of 300 mg as a liquid formulation in healthy volunteers, secukinumab reached peak serum concentrations of 43.2±10.4 µg/ml between 2 and 14 days post dose.

Based on population pharmacokinetic analysis, following a single subcutaneous dose of either 150 mg or 300 mg in plaque psoriasis patients, secukinumab reached peak serum concentrations of 13.7±4.8 µg/ml or 27.3±9.5 µg/ml, respectively, between 5 and 6 days post dose.

After initial weekly dosing during the first month, time to reach the maximum concentration was between 31 and 34 days based on population pharmacokinetic analysis.

On the basis of simulated data, peak concentrations at steady-state ($C_{max,ss}$) following subcutaneous administration of 150 mg or 300 mg were 27.6 µg/ml and 55.2 µg/ml, respectively. Population pharmacokinetic analysis suggests that steady-state is reached after 20 weeks with monthly dosing regimens.

Compared with exposure after a single dose, the population pharmacokinetic analysis showed that patients exhibited a 2-fold increase in peak serum concentrations and area under the curve (AUC) following repeated monthly dosing during maintenance.

Population pharmacokinetic analysis showed that secukinumab was absorbed with an average absolute bioavailability of 73% in patients with plaque psoriasis. Across studies, absolute bioavailabilities in the range between 60 and 77% were calculated.

The bioavailability of secukinumab in PsA patients was 85% on the basis of the population pharmacokinetic model.

Following subcutaneous administration of 300 mg at weeks 0, 1, 2, 3 and 4 followed by 300 mg every 2 weeks, the mean ± SD steady-state secukinumab trough concentration at week 16 was approximately 55.1±26.7 µg/ml and 58.1±30.1 µg/ml in HS study 1 and HS study 2, respectively.

Distribution

The mean volume of distribution during the terminal phase (V_z) following single intravenous administration ranged from 7.10 to 8.60 litres in plaque psoriasis patients, suggesting that secukinumab undergoes limited distribution to peripheral compartments.

Biotransformation

The majority of IgG elimination occurs via intracellular catabolism, following fluid-phase or receptor mediated endocytosis.

Elimination

Mean systemic clearance (CL) following a single intravenous administration to patients with plaque psoriasis ranged from 0.13 to 0.36 l/day. In a population pharmacokinetic analysis, the mean systemic clearance (CL) was 0.19 l/day in plaque psoriasis patients. The CL was not impacted by gender. Clearance was dose- and time-independent.

The mean elimination half-life, as estimated from population pharmacokinetic analysis, was 27 days in plaque psoriasis patients, ranging from 18 to 46 days across psoriasis studies with intravenous administration.

In a population pharmacokinetic analysis, the mean systemic CL following subcutaneous administration of 300 mg at weeks 0, 1, 2, 3, and 4 followed by 300 mg every 2 weeks to patients with hidradenitis suppurativa was 0.26 l/day.

The mean elimination half-life, as estimated from population pharmacokinetic analysis, was 23 days in hidradenitis suppurativa patients.

Linearity/non-linearity

The single and multiple dose pharmacokinetics of secukinumab in plaque psoriasis patients were determined in several studies with intravenous doses ranging from 1x 0.3 mg/kg to 3x 10 mg/kg and with subcutaneous doses ranging from 1x 25 mg to multiple doses of 300 mg. Exposure was dose proportional across all dosing regimens.

Special populations

Elderly patients
Based on population pharmacokinetic analysis with a limited number of elderly patients (n=71 for age ≥65 years and n=7 for age ≥75 years), clearance in elderly patients and patients less than 65 years of age was similar.

Patients with renal or hepatic impairment
No pharmacokinetic data are available in patients with renal or hepatic impairment. The renal elimination of intact secukinumab, an IgG monoclonal antibody, is expected to be low and of minor importance. IgGs are mainly eliminated via catabolism and hepatic impairment is not expected to influence clearance of secukinumab.

Effect of weight on pharmacokinetics
Secukinumab clearance and volume of distribution increase as body weight increases.

5.3 Preclinical safety data

Non-clinical data revealed no special hazard for humans based on conventional studies of safety pharmacology, repeated dose and reproductive toxicity, or tissue cross-reactivity.

Animal studies have not been conducted to evaluate the carcinogenic potential of secukinumab.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Sucrose
L-Histidine
L-Histidine hydrochloride monohydrate
Polysorbate 80

6.2 Incompatibilities

This medicinal product must not be mixed with other medicinal products except those mentioned in section 6.6.

6.3 Shelf life

Should not be used after the date marked “EXPIRY DATE” on the pack

After reconstitution

Chemical and physical in-use stability has been demonstrated for 24 hours at 2ºC to 8ºC.
From a microbiological point of view, unless the method of reconstitution precludes the risk of microbial contamination, the product should be used immediately.

6.4 Special precautions for storage

Store in a refrigerator (2°C - 8°C).
For storage conditions after reconstitution of the medicinal product, see section 6.3

6.5 Nature and contents of container

Scapho is supplied in a colourless glass vial with a grey coated rubber stopper and aluminium cap with a white flip-off component containing 150 mg of secukinumab.

Scapho is available in packs containing one vial.

6.6 Special precautions for disposal and other handling

The single-use vial contains 150 mg secukinumab for reconstitution with sterile water for injections. The resulting solution should be clear and colourless to slightly yellow. Do not use if the lyophilised powder has not fully dissolved or if the liquid contains easily visible particles, is cloudy or is distinctly brown.

Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

The following information is intended for medical or healthcare professionals only.

The preparation of the solution for subcutaneous injection must be done without interruption and ensuring that aseptic technique is used. The preparation time from piercing the stopper until end of reconstitution takes 20 minutes on average and should not exceed 90 minutes.

Please adhere to the following instructions for administration of Scapho 150 mg powder for solution for injection

1. Bring the vial of powder to room temperature and ensure that the sterile water for injections is at room temperature.
2. Withdraw slightly more than 1.0 ml sterile water for injections into a 1 ml graduated disposable syringe and adjust to 1.0 ml.
3. Remove the plastic cap from the vial.
4. Insert the syringe needle into the vial containing the powder through the centre of the rubber stopper and reconstitute the powder by slowly injecting 1.0 ml of sterile water for injections into the vial. The stream of sterile water for injections should be directed onto the powder.

5. Tilt the vial to an angle of approx. 45° and gently rotate between the fingertips for approx. 1 minute. Do not shake or invert the vial.

6. Keep the vial standing at room temperature for a minimum of 10 minutes to allow for dissolution. Note that foaming of the solution may occur.

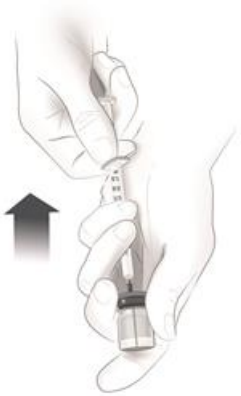
7. Tilt the vial to an angle of approx. 45° and gently rotate between the fingertips for approx. 1 minute. Do not shake or invert the vial.

8. Allow the vial to stand undisturbed at room temperature for approximately 5 minutes. The resulting solution should be clear. Its colour may vary from colourless to slightly yellow. Do not use if the lyophilised powder has not fully dissolved or if the liquid contains easily visible particles, is cloudy or is distinctly brown.
9. Prepare the required number of vials (1 vial for the 150 mg dose, 2 vials for the 300 mg dose).

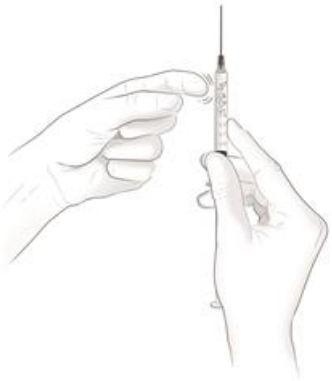
After storage at 2°C to 8°C, the solution should be allowed to come to room temperature for approximately 20 minutes before administration.

Instructions for administration of Scapho solution

1. Tilt the vial to an angle of approximately 45° and position the needle tip at the very bottom of the solution in the vial when drawing the solution into the syringe. DO NOT invert the vial.

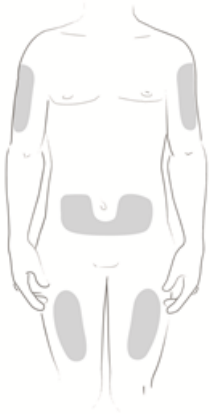


2. For the 150 mg and 300 mg doses, carefully withdraw slightly more than 1.0 ml of the solution for subcutaneous injection from the vial into a 1 ml graduated disposable syringe using a suitable needle (e.g. 21G x 2″). This needle will only be used for withdrawing Scapho into the disposable syringe. Prepare the required number of syringes (2 syringes for the 300 mg dose).
3. With the needle pointing upward, gently tap the syringe to move any air bubbles to the top.



4. Replace the attached needle with a 27G x ½″ needle.

5. Expel the air bubbles and advance the plunger to the 1.0 ml mark for the 150 mg dose.
6. Clean the injection site with an alcohol swab.
7. Inject the Scapho solution subcutaneously into the front of thighs, lower abdomen (but not the area 5 centimetres around the navel) or outer upper arms. Choose a different site each time an injection is administered. Do not inject into areas where the skin is tender, bruised, red, scaly or hard. Avoid areas with scars or stretch marks.



8. Any remaining solution in the vial must not be used and should be discarded in accordance with local requirements. Vials are for single use only. Dispose of the used syringe in a sharps container (closable, puncture-resistant container). For the safety and health of you and others, needles and used syringes must never be re-used.

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