



# PLAQUE PSORIASIS: THE EVIDENCE TO GUIDE PRACTICE PATHWAYS



# ONLINE PANEL DISCUSSION

Tuesday 30 November 2021



## + TARGETED THERAPIES ALLIANCE

Helping consumers and health professionals make safe and wise therapeutic decisions about biological disease-modifying antirheumatic drugs (bDMARDs) and other specialised medicines. Funded by the Australian Government Department of Health through the Value in Prescribing bDMARDs Program Grant.

+ TARGETED THERAPIES ALLIANCE



THE AUSTRALASIAN COLLEGE  
OF DERMATOLOGISTS



University of  
South Australia



NPS  
MEDICINEWISE

# MEET THE PANEL



**Prof Debra Rowett**  
Discipline Lead, Pharmacy  
UniSA consortium lead



**A/Prof Peter Foley**  
Dermatologist



**A/Prof Stephen Shumack**  
Dermatologist



**A/Prof Michael Ward**  
Discipline Lead, Pharmacy

Declarations of interest provided at end of slides

# OUTLINE

## The panel will discuss:

- ▶ The place of low-dose methotrexate in therapy
- ▶ Choice of biologic for first and second-line biological therapy
- ▶ The use of biologics in combination with other immunomodulators
- ▶ Fundamentals of biosimilars and their role in therapy
- ▶ Immunisation for patients with plaque psoriasis

# BACKGROUND

- ▶ Evidence summaries developed on behalf of the Targeted Therapies Alliance.
- ▶ These underpin the design and delivery of services and resources for dermatologists and patients with plaque psoriasis.



# LOW-DOSE METHOTREXATE



# ROLE OF SUBCUTANEOUS METHOTREXATE

## ▶ Benefits

- ▶ Higher bioavailability
- ▶ less GI adverse effects than oral MTX
- ▶ acceptable for self-administration by patients

# SAFETY

- ▶ MTX in the treatment of psoriasis does not pose an additional risk of developing cancer for people with psoriasis
- ▶ There may be a small additional increase in the risk of developing non-melanoma skin cancer

# LOW-DOSE METHOTREXATE FOR PLAQUE PSORIASIS

Psoriasis is an autoimmune condition that affects your skin. While it can't be cured, many people with plaque psoriasis find that their symptoms can be well controlled with the right treatment. Methotrexate is a medicine used in low doses to treat plaque psoriasis. Use this action plan to discuss methotrexate with your dermatologist. It can help you understand the benefits and risks, as well as the need for monitoring and checks.

Methotrexate acts to control the disease. Methotrexate doesn't work on the surface of your skin like topical treatments like creams, ointments and tars. It works by interfering with the immune system that causes psoriasis. This slows down the growth of skin cells and reduces inflammation.

**Methotrexate is taken once a week.**  
It can be taken as a tablet or given as an injection under your skin (subcutaneous) or into your muscle (intramuscular).

Compared with tablets, methotrexate injections are more effective, and may cause fewer side effects.

decreases the need for glucocorticoids (also known as corticosteroids or steroids) which reduces the chance of complications caused by uncontrolled inflammation.

**Methotrexate**  
keeps plaque psoriasis under control  
reduces flares

## Focus on facts

Myths about methotrexate can be barriers to treatment. Knowing the facts helps people stick to their treatment and improves results.

<b>Fact</b> Methotrexate for plaque psoriasis is used safely and effectively at low doses – it's not considered chemotherapy at these doses.	<b>Fact</b> Methotrexate taken once a week – you might not notice an improvement in your skin for 6-12 weeks.	<b>Fact</b> Methotrexate injections can be safely given by yourself or a family member or friend.	<b>Fact</b> People taking methotrexate for plaque psoriasis can safely make physical contact with pregnant women.
<b>Myth</b> Low-dose methotrexate is chemotherapy.	<b>Myth</b> You will need a low form of chemotherapy straight away.	<b>Myth</b> Using yourself or family member to inject is unsafe.	<b>Myth</b> People taking methotrexate should be near pregnant women.

## Chasing cure

**Blood tests**  
Regular blood tests are used to check treatment is working and monitor for side effects, measuring kidney and liver function, and doing full blood count. One time, these tests are needed less often.

**Clinical review**  
Continue regular reviews of your plaque psoriasis with your prescribing doctor. How often depends on how active the disease is.

## Vaccinations

Keep your pneumococcal and influenza vaccinations up to date.



The Australian Coat of Arms  
of Dermatologists



# ACTION PLAN

## DATE

# TAKING LOW-DOSE METHOTREXATE

is an action plan with your healthcare team to help you achieve your treatment goals.

### Take my medicines

When	Day of the week	Dose (mg)
Once a week	On different days of the week from methotrexate	

### When to contact my doctor

**Urgently**  
If I develop any new infections. Signs of infection include fever, and red or painful skin or wounds.  
If I develop breathing difficulties and/or a dry cough.

**As soon as possible**  
If I experience a flare-up of my plaque psoriasis.

**Regularly**  
To make appointments for routine tests to monitor my disease and medicines.  
To check that I am up to date with my vaccines, and seek advice for travel vaccines.  
If I am taking or plan to take any other medicines, including over-the-counter, herbal and naturopathic medicines.

view due:  
medicines I use for  
psoriasis

### Effects of methotrexate

Some methotrexate may cause side effects. Common side effects include vomiting, diarrhea, drowsiness, headache and feeling foggy. It may also reduce your skin's sensitivity to the sun.  
If you are concerned, side effects may be reduced by taking methotrexate with food or in the evening.

### Further information

**NPS Medicinewise** ([nps.org.au/medicinewise](http://nps.org.au/medicinewise))  
Download the Medicinewise app to keep track of your medicines and access health education such as blood test results.  
NPS Medicinewise Line 1800 633 424



### TARGETED THERAPIES ALLIANCE

Consumers and health professionals make safe and wise therapeutic decisions about biologics and other targeted therapies through the Value in Care (VIC) and other specialised medicines. It is guided by the Australian Government Department of Health through the Value in Care (VIC) Program Grants.



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# SPECIAL CONSIDERATIONS

## ▶ Pregnancy

- Post-conception methotrexate is contraindicated
- Pre-conception - 2020 'American College of Rheumatology Guideline for the Management of Reproductive Health in Rheumatic and Musculoskeletal Diseases'
  - no evidence for mutagenesis or teratogenicity in men planning to father a pregnancy.

# IMMUNISATIONS

- ▶ All vaccinations are administered and completed at least two weeks before starting treatment
- ▶ National Immunisation Handbook
  - Inactivated vaccines can be administered without treatment discontinuation of MTX.
  - Live attenuated zoster vaccine in patients taking  $<0.4\text{mg/kg/week}$  MTX and no other immunocompromising medication
  - Varicella vaccine
- ▶ COVID vaccine

# LINE OF THERAPY – BIOLOGICS

- ▶ Where to start and move on to
  - Evidence for first-line choices of biologics in plaque psoriasis

# LINE OF THERAPY – BIOLOGICS

- ▶ Loss of response

# CHOICE OF THERAPY WITH COMORBIDITIES

- ▶ First and second line biologic choices
- ▶ Comorbidity considerations

Comorbidity	Comments
Psoriatic arthritis	Depends on focus either PsO or PsA Possibly combine biologics with MTX in case of peripheral active joint involvement.
Crohn disease	Avoid IL-17 inhibitors
Ulcerative colitis	Avoid IL-17 inhibitors
Multiple sclerosis	Avoid TNF inhibitors
Heart failure	Avoid TNF inhibitors

# BIOSIMILARS



Australian Government  
Department of Health  
Therapeutic Goods Administration

Biosimilar medicines regulation

Version 2.2, April 2018

TGA Health Safety  
Regulation

***[Biosimilar product name]*** is a biosimilar medicine to ***[Reference medicine name]***.  
The **evidence for comparability supports the use** of ***[Biosimilar product name]*** for the **listed indication[s]**

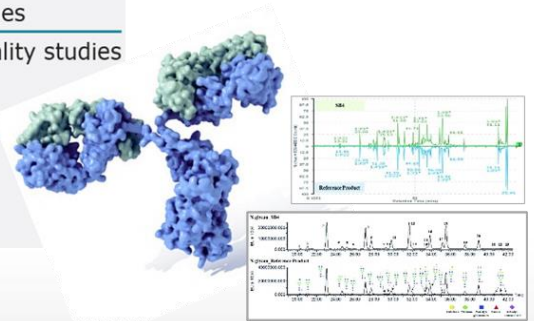
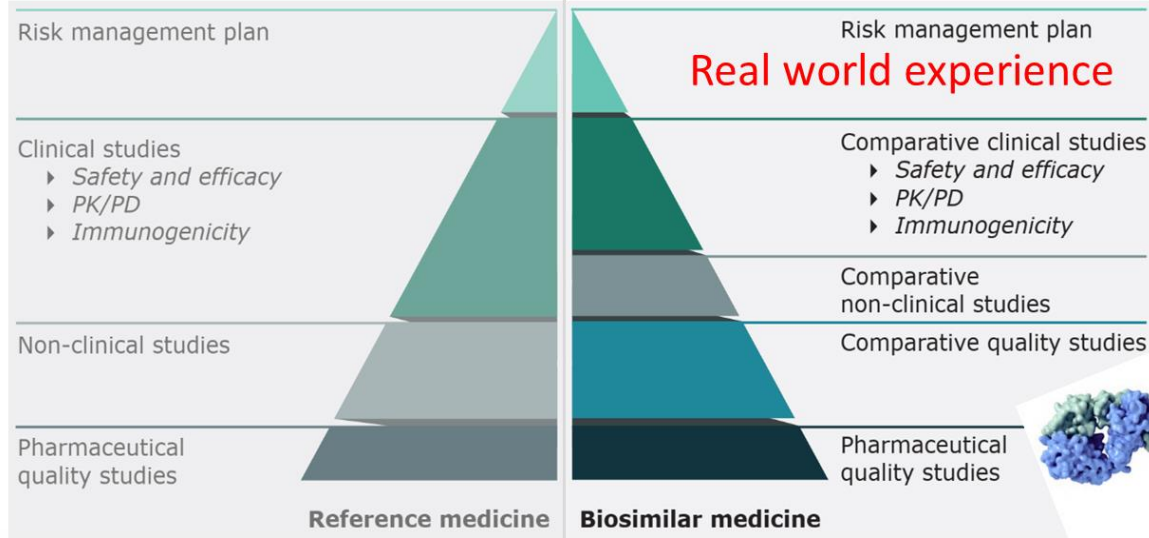


# BIOSIMILAR DEVELOPMENT AND APPROVAL



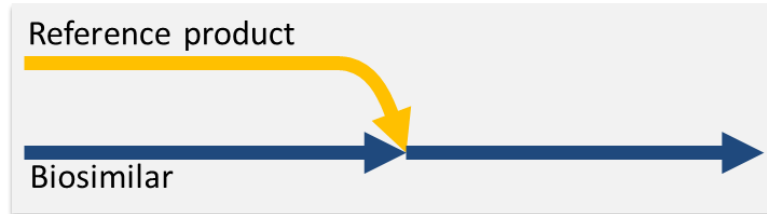
demonstrating safety & efficacy directly in patients for the first time

demonstrating comparable safety & efficacy by establishing biosimilarity

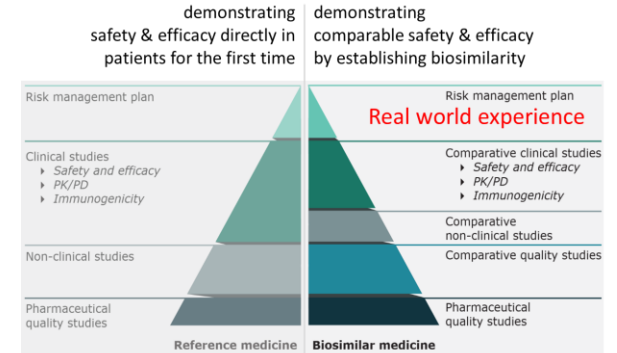
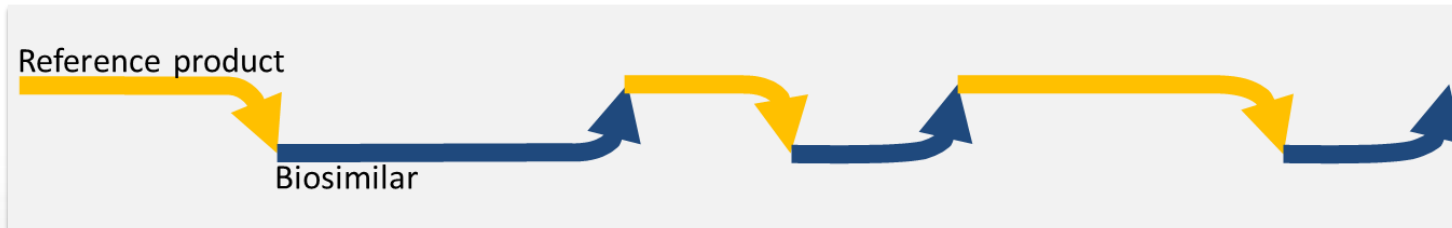
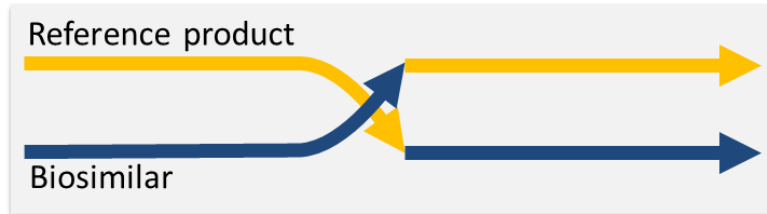


[http://www.ema.europa.eu/ema/index.jsp?curl=pages/medicines/general/general\\_content\\_001832.jsp&mid=WC0b01ac0580bb8fda](http://www.ema.europa.eu/ema/index.jsp?curl=pages/medicines/general/general_content_001832.jsp&mid=WC0b01ac0580bb8fda)

# SWITCHING AND SUBSTITUTION



OR





# BIOSIMILAR INFLIXIMAB – REAL WORLD EXPERIENCE

## Multi-centre reports with larger patient numbers

### Conclusion

*“In 802 arthritis patients treated with INX for median >6 years, a nationwide non-medical switch to CT-P13 had no negative impact on disease activity. Adjusted 1-year CT-P13 retention rate was slightly lower than for INX in a historic cohort.”*

### Conclusion

*“In summary, in our study with the largest cohort of patients with IBD treated with CT-P13 described so far, we have demonstrated in the evaluated time frame that **the safety profile and efficacy of CT-P13 biosimilar is in line with the existing literature of infliximab. No alarming signals of immunization** have been detected in patients switched from the infliximab.”*

### Conclusion

*“The principal finding of this study is that patients with chronic plaque psoriasis who respond to the infliximab originator can be **switched to the biosimilar CT-P13 without experiencing a significant change in clinical response** or additional adverse events including infusion reactions. Moreover, **CT-P13 is effective also in naïve patients** with a PASI reduction being in line with that reported for the originator. In terms of **safety**, a limited number of adverse events including infusion reactions like those expected with the originator and **without any significant difference between the switch and naïve group** was observed.”*

# BIOSIMILAR INFLIXIMAB

## Studies that describe a challenging journey of implementation

Journal of Neurology  
<https://doi.org/10.1007/s00415-019-09234-y>

ORIGINAL COMMUNICATION



**Infliximab biosimilar for treating neurosarcoidosis: tolerance and efficacy in a retrospective study including switch from the originator and initiation of treatment**

Quentin Riller<sup>1</sup> · Camille Cotteret<sup>2</sup> · Helga Junot<sup>2</sup> · Neila Benameur<sup>2</sup> · Julien Haroche<sup>1</sup> · Alexis Mathian<sup>1</sup> · Miguel Hie<sup>1</sup> · Makoto Miyara<sup>3</sup> · Patrick Tilleul<sup>2</sup> · Zahir Amoura<sup>1</sup> · Fleur Cohen Aubart<sup>1</sup>

Received: 8 December 2018 / Revised: 27 January 2019 / Accepted: 5 February 2019  
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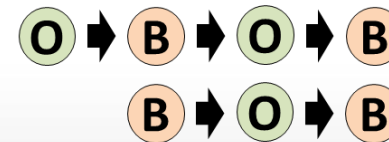
**Table 1** Clinical characteristics of patients who received the infliximab biosimilar

Patient	Sex, age	Clinical manifestations	Follow-up	S/I	Outcomes <sup>a</sup>	Relapses <sup>b</sup>	Side effects	Prior treatment	Concomitant treatment <sup>c</sup>
#1	F, 41	T, J (M, C, R)	27	I	CR	0	Pulmonary infection	MTX, GC	MTX, GC (5)
#2	F, 37	T, E, S (M, Med)	24	S	PR	0	0	MTX, CYC, AZA, GC	MTX, GC (10)
#3	M, 31	T, E, (C, Med, E)	28	S	-	1 (5)	Infection	GC	MTX, GC (7)
#4	M, 32	T, E, (M, ICH)	26	I	PR	0	Urticaria	MTX, GC	MTX, GC (5)
#5	M, 33	T, E, (M, C, Med)	28	S	-	1 (5)	Larva migrans	CYC, GC	MTX, GC (10)
#6	M, 41	T (M, Med, C)	28	S	CR	0	0	CYC, GC	MTX, GC (5)
#7	F, 50	T, S, (M, Med, CN, R, C)	25	S	CR	0	0	MTX, CYC, MMF, GC	MTX, GC (5)
#8	F, 42	T, (M)	27	S	PR	1 (9)	0	MTX, CYC, GC	MTX, GC (5)
#9	M, 29	T, O, (Med)	24	I	PR	0	0	MTX, GC	GC (5)
#10	F, 47	T, (M, CN, ICH)	24	I	PR	0	0	AZA, GC	GC (5)
#11	M, 52	T, (ICH, M)	27	I	PR	0	0	MTX, GC	MTX, GC (5)
#12	F, 49	T, (Med, CN)	28	S	-	0 (2)	Headache	GC	MTX, GC (5)
#13	M, 42	T, S, (C, E, M)	23	I	PR	0	Pulmonary infection	GC, MTX	MTX, GC (5)
#14	M, 32	T, H, (C, M, Med)	24	I	PR	0	0	GC, MTX, CYC, AZA, MMF	AZA, GC (5)
#15	F, 50	T, (M)	22	I	PR	0	Whitlow	GC	GC (10)
#16	F, 47	Hep, (M, C, Med, ICH)	22	I	PR	1 (3)	0	GC	MTX, GC (10)
#17	M, 43	T, E, B (CN, M, C)	19	I	PR	0	0	GC, MTX	MTX (0)
#18	M, 43	B, (C, E)	27	S	PR	1 (7)	Urticaria	GC, CYC	AZA, GC (5)
#19	M, 42	T, B, J, O, (M)	19	I	PR	1 (15)	Diarrhea, urticaria	GC, MTX, HCQ	MTX, HC (0)
#20	M, 50	T, O, (CN)	25	I	CR	0	0	GC	GC (5)

*“During the study period, a steering committee was convened consisting of rheumatologists, pharmacists, and internal medicine practitioners who decided to switch to the infliximab originator in individual cases if they had concerns about safety or efficacy.”*



*“Among the six patients who relapsed, five subsequently received the infliximab originator. Four patients did not improve or relapsed with this switch to the originator, thus they were switched back to the biosimilar.”*



# BARRIERS TO THE UPTAKE OF BIOSIMILARS PERCEPTIONS ARE IMPORTANT



# ADDRESSING NOCEBO THROUGH EDUCATION

**Australian Government  
Department of Health**

## Biosimilar medicines: the basics for health care professionals



**What are biological and biosimilar medicines?**  
Biological medicines, including biosimilar medicines, contain one or more active substances that are derived from living cells or organisms.

**How are biosimilar medicines developed?**  
These medicines are used to treat serious diseases such as cancer, diabetes, rheumatoid arthritis, severe psoriasis, kidney disease, multiple sclerosis, and inflammatory bowel diseases such as ulcerative colitis and Crohn's disease.

**Who chooses whether the biosimilar medicine is used?**  
Biosimilar medicines are highly similar, but not identical, versions of an already registered biological medicine (the reference biological medicine). This is because the inherent variability of the biological systems used in the manufacturing process means that the resulting product is also variable. No two batches of a biological medicine, including biosimilar medicines, are ever exactly the same (even from the same manufacturer).

**Is there a difference in health outcomes between the biosimilar medicine and the reference biological medicine?**  
For a biosimilar medicine to be approved, its structural variability must not be greater than the acceptable limits of batch variation for the reference biological medicine. All critical quality attributes (i.e. those important for the function of the molecule) must be highly similar.

**How is the safety of biosimilar medicines monitored (pharmacovigilance)?**  
Biosimilar medicines that are approved for marketing have been assessed to have no clinically meaningful differences and to be therapeutically equivalent to the reference biological medicine.

**Where can I find more information?**  
Biosimilar medicines are expected to deliver significant savings, which can be reinvested into other areas of the Australian health system and expand access to biological medicines as they become more affordable.

## How are biosimilar medicines developed?


The development process varies between reference biological and biosimilar medicines:

- In reference biological medicine development, the majority of time and effort is spent in clinical studies that establish the clinical benefit of the medicine.
- In biosimilar medicine development, the majority of time and effort is spent in comprehensive analytical comparison studies that establish the similarity of the medicine to the reference biological medicine, because the clinical benefits have already been established.

As a result of these studies, it has been determined that there are no significant differences in the critical quality attributes that affect safety, effectiveness or quality.

### Comparison of the development pathway of reference biological vs biosimilar medicines

Pre-clinical assessments	Clinical assessments
<ul style="list-style-type: none"> <li>Analytical characterisation</li> <li>Structural</li> <li>In-vivo functional</li> </ul>	<ul style="list-style-type: none"> <li>Pharmacokinetic/pharmacodynamic (PK/PD)</li> <li>Toxicology</li> <li>Pharmacoeconomic</li> <li>Efficacy</li> <li>Safety</li> </ul>



Adapted from Bu et al (2018). Key considerations in the preclinical development of biosimilars. Drug Discovery Today (2018), 1-7

## Who chooses whether the biosimilar medicine is used?

The medicine used for treatment is a choice that is made by doctors in consultation with their patients. Health care professionals are encouraged to talk through these choices with their patients. The Biosimilar medicines: the basics – information for consumers and carers brochure is aimed at consumers and will help to answer common questions.


If one brand of medicine can be exchanged for another by the pharmacist, they are "substitutable", which means pharmacists can substitute between brands in consultation with the patient but without needing to refer back to the doctor. Substitution between brands of biological medicines is considered by the Pharmaceutical Benefits Advisory Committee (PBAC) and recommended on a case-by-case basis.

Even if a medicine is substitutable, the doctor can tick the "brand substitution not permitted" box when writing a prescription. If this box is ticked, by law the pharmacist cannot dispense a brand other than that prescribed.

In the public hospital setting, brand decisions are made by clinician-led committees and are based on the safety, efficacy and cost-effectiveness of the medicine. For more information, refer to the guiding principles from the Council of Australian Therapeutic Advisory Groups on the governance of biological and biosimilar medicines in Australian hospitals ([www.catalog.org.au/resources/gp-guidance](http://www.catalog.org.au/resources/gp-guidance)).

**Australian Government  
Department of Health**

## Biosimilar medicines: the basics



**INFORMATION FOR CONSUMERS AND CARERS**

- What are biological and biosimilar medicines?
- Who uses them and who chooses?
- Why are biosimilar medicines important?
- How are biosimilar medicines assessed and regulated?
- Commonly asked questions about biosimilar medicines
- Where can I find more information?

## What are biosimilar medicines?

Biological and biosimilar medicines come from living cells. Biosimilar medicines are highly similar. The effects are the same.

## Who uses them?

Biological medicines provide important new ways to treat many serious and chronic conditions.

- Arthritis
- Cancer
- Intestinal diseases
- Diabetes

Talk with your doctor or pharmacist about choosing biosimilar medicines.

## Why are they important?

Improved access for more patients. More brand options. Savings are reinvested to improve health care. Better health care.

## How are they regulated?

Medicine is developed. TGA assesses the evidence. Rigorous testing. Manufacturing compliance is enforced. All medicines that use the molecule are monitored once they reach the market. Adverse events and molecular changes are assessed. Medicine is registered.

[http://www.health.gov.au/internet/main/publishing.nsf/content/biosimilar-awareness-initiative/\\$File/Biosimilar-medicines-the-basics-for-health-care-professionals-Brochure.pdf](http://www.health.gov.au/internet/main/publishing.nsf/content/biosimilar-awareness-initiative/$File/Biosimilar-medicines-the-basics-for-health-care-professionals-Brochure.pdf)

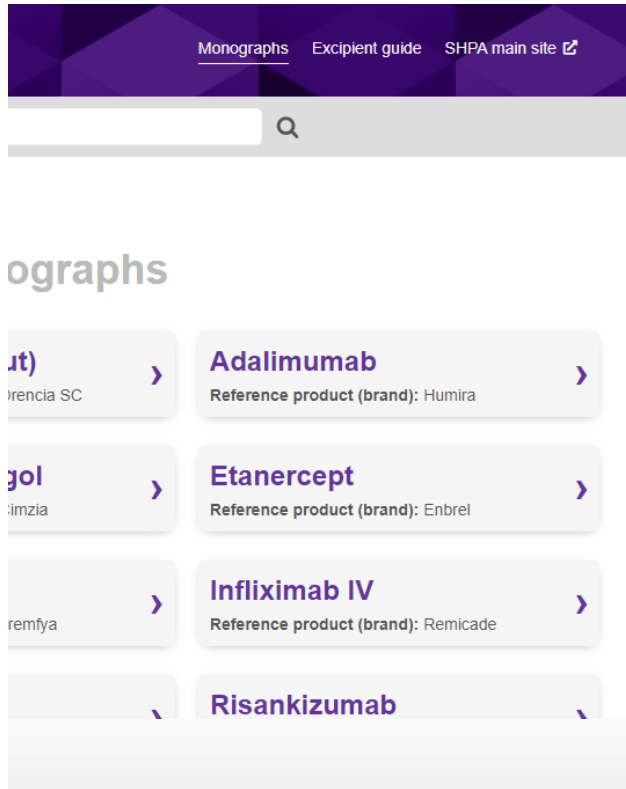
[http://www.health.gov.au/internet/main/publishing.nsf/content/biosimilar-awareness-initiative/\\$File/Biosimilar-medicines-the-basics-for-consumers-and-careers-Brochure.pdf](http://www.health.gov.au/internet/main/publishing.nsf/content/biosimilar-awareness-initiative/$File/Biosimilar-medicines-the-basics-for-consumers-and-careers-Brochure.pdf)



# Biologics and biosimilars best practice

Guiding principles for the governance of biologics and their biosimilars in Australian hospitals

Version 3 – October 2021



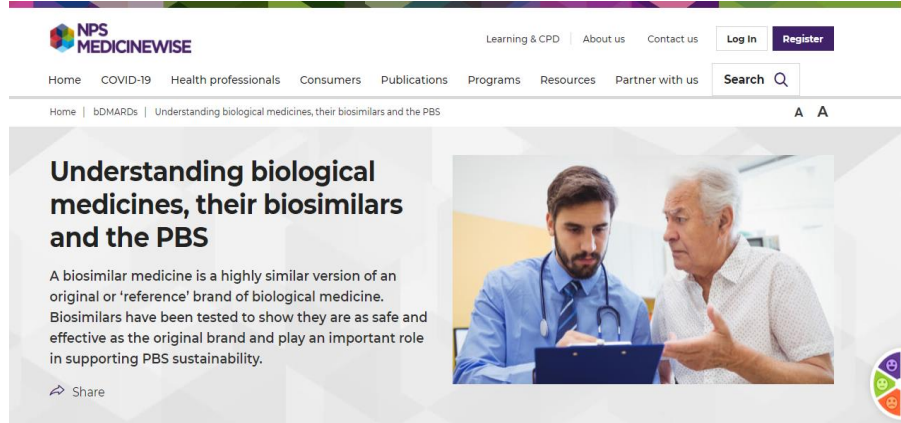
Monographs   Excipient guide   SHPA main site [↗](#)

Search

## Monographs

- [Adalimumab](#)  
Reference product (brand): Humira
- [Etanercept](#)  
Reference product (brand): Enbrel
- [Infliximab IV](#)  
Reference product (brand): Remicade
- [Risankizumab](#)

# RESOURCES



**NPS MEDICINEWISE**

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Home | bDMARDs | Understanding biological medicines, their biosimilars and the PBS

## Understanding biological medicines, their biosimilars and the PBS

A biosimilar medicine is a highly similar version of an original or 'reference' brand of biological medicine. Biosimilars have been tested to show they are as safe and effective as the original brand and play an important role in supporting PBS sustainability.

Share

## Understanding biosimilars: For your patients



Find answers to consumers' common questions about biosimilars

[Understanding biosimilars](#) →

## Biologics, biosimilars and PBS sustainability



Biologics have a significant and positive impact on the treatment of many severe acute and chronic diseases. After the patents on the original (reference) biologics expire, competing manufacturers are able to develop biosimilars, which are highly similar versions of a specific reference biologic (sometimes called the 'originator' biologic). Once this happens, market competition usually drives prices down

[Read the full article](#) →

## Podcast: Demystifying biologics, their biosimilars and the PBS

Podcasts



18 MAY · 20 MIN.

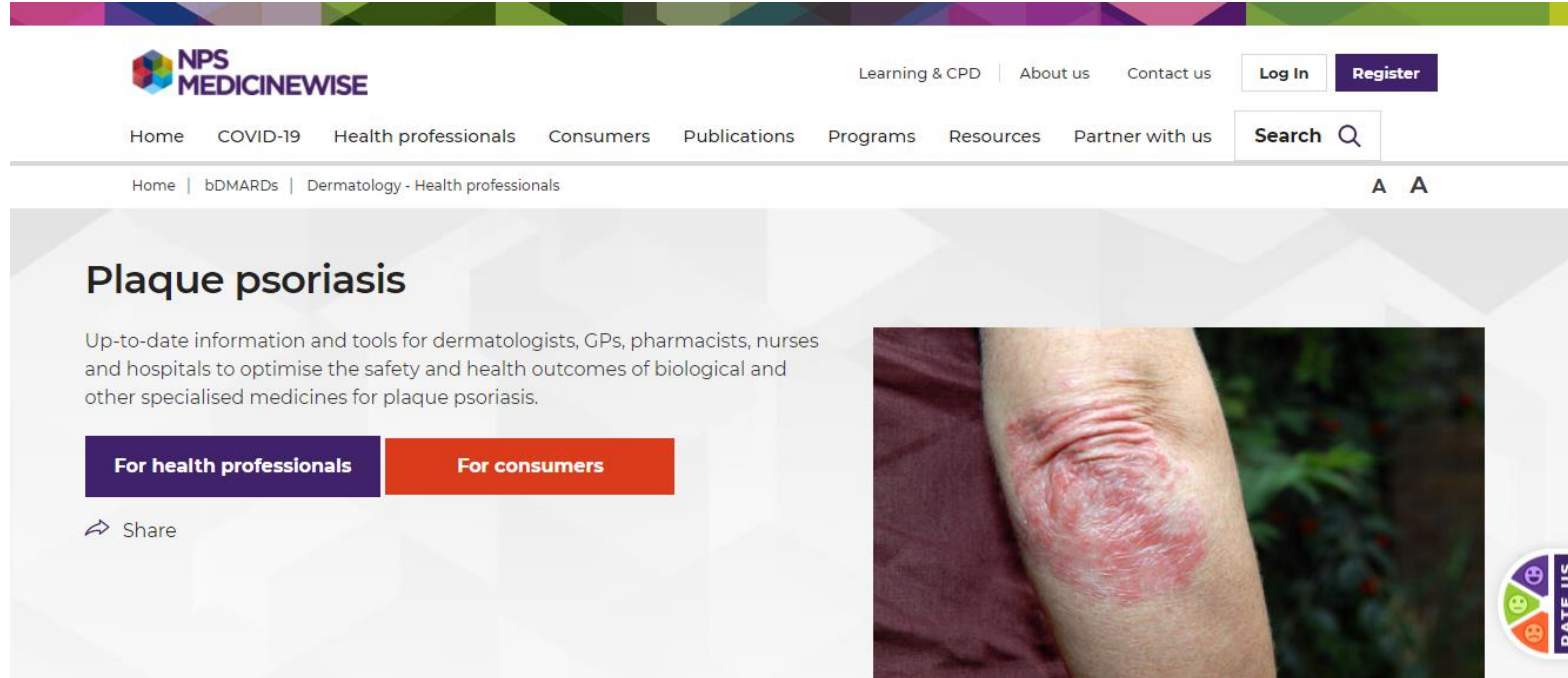
Demystifying biologics, their biosimilars and the PBS  
ARA Audio Rheum

Play

[See More](#) ↗

[nps.org.au/bdmards/biologics-and-biosimilars](https://nps.org.au/bdmards/biologics-and-biosimilars)

# RESOURCES



The screenshot shows the NPS Medicinewise website interface. At the top, there is a navigation bar with the NPS Medicinewise logo on the left and links for 'Learning & CPD', 'About us', and 'Contact us' in the center. On the right side of the navigation bar are 'Log In' and 'Register' buttons. Below the navigation bar is a secondary menu with links for 'Home', 'COVID-19', 'Health professionals', 'Consumers', 'Publications', 'Programs', 'Resources', and 'Partner with us'. A search bar is located on the right side of this menu. Below the secondary menu is a breadcrumb trail: 'Home | bDMARDs | Dermatology - Health professionals'. The main content area features the title 'Plaque psoriasis' in a large, bold font. Below the title is a paragraph of text: 'Up-to-date information and tools for dermatologists, GPs, pharmacists, nurses and hospitals to optimise the safety and health outcomes of biological and other specialised medicines for plaque psoriasis.' Underneath the text are two buttons: 'For health professionals' (purple) and 'For consumers' (orange). To the left of the buttons is a 'Share' link with a right-pointing arrow icon. On the right side of the main content area is a large image of a person's elbow showing red, scaly plaques characteristic of psoriasis. In the bottom right corner of the image area is a 'RATE US' button with a circular icon containing three faces (happy, neutral, sad).

[nps.org.au/bdmards/dermatology](https://nps.org.au/bdmards/dermatology)

# RESOURCES

## ▶ NPS MedicineWise [nps.org.au/bdmards](https://nps.org.au/bdmards)

- Factsheet: [Treating your plaque psoriasis with creams and ointments](#)
- Decision aid: [Plaque psoriasis: My options when topical treatments aren't enough](#)
- Action plan: [Low-dose methotrexate for plaque psoriasis](#)
- Online content: [Understanding biosimilars](#)

## ▶ CATAG

- [Guiding Principles for the governance of biologics and their biosimilars in Australian hospitals](#)
- [CATAG Position Statement on the use of low-dose methotrexate](#)

## ▶ SHPA

- [bDMARDs Quick reference guide](#)





# QUESTIONS



# DISCLOSURES

## Debra Rowett

No disclosures to declare

## Stephen Shumack

*Investigator for the following companies:*

Abbvie, Pfizer, Janssen, Leo Pharma, Lilly,

*Advisory Board positions for the following companies:*

Lilly, AbbVie, Janssen, Novartis

# DISCLOSURES

## Peter Foley

Abbvie;<sup>A,I,R,SP,T</sup> Amgen;<sup>A,I,R</sup> BMS;<sup>A,C,I</sup> Boehringer Ingelheim;<sup>A,I</sup>  
Janssen;<sup>A,C,I,R,SP,T</sup> Leo Pharma;<sup>A,C,I,SP,T</sup> Lilly;<sup>A,C,I,R,SP,T</sup> Merck;<sup>A,I,R,SP,T</sup>  
Novartis;<sup>A,C,I,R,SP,T</sup> Pfizer;<sup>A,C,I,R,SP,T</sup> Sun Pharma;<sup>A,I,R,T</sup> UCB Pharma;<sup>A,C,I,SP</sup>  
Valeant;<sup>A,I,SP</sup> Aslan;<sup>C,I</sup> Astra Zeneca;<sup>I</sup> Arcutis;<sup>I</sup> Argenx;<sup>I</sup> Aslan;<sup>I</sup> Botanix;<sup>I</sup>  
Celgene;<sup>A,I,R,SP</sup> Celtaxsys;<sup>I</sup> CSL;<sup>I</sup> Cutanea;<sup>I</sup> Dermira;<sup>I</sup> Galderma;<sup>A,C,I,R,SP,T</sup>  
Genentech;<sup>I</sup> GeneSeq;<sup>I</sup> GSK;<sup>A,I,SP</sup> Hexima;<sup>C,I</sup> Mayne Pharma;<sup>A,C</sup>  
MedImmune;<sup>I,C</sup> Regeneron Pharmaceuticals Inc;<sup>I</sup> Reistone;<sup>I</sup> Roche;<sup>C,I,SP,T</sup>  
Sanofi;<sup>A,I,R,SP,T</sup>

<sup>A</sup> = advisory board; <sup>C</sup> = consultant; <sup>I</sup> = investigator (clinical trials); <sup>R</sup> = research grants; <sup>SP</sup> = speaker's bureaux/honoraria;  
<sup>T</sup> = travel grants

# DISCLOSURES

## Michael Ward

Has been engaged by GBMA Education to conduct literature reviews on biosimilar medicines as a component of the Department of Health Biosimilar Awareness initiative.



# THANK YOU

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