# R&D For Unmet Needs & Patent Management

**GRI Standards:** 

N/A

# R&D For Unmet Needs and Patent Management – Develop new solutions for patients and manage patents responsibly.

### **R&D For Unmet Needs**

Innovation is the essence of the research-based pharmaceutical industry. Over the last decades, Sanofi has demonstrated a sustained contribution to global health challenges by developing a large portfolio of solutions for a wide range of diseases that affect millions of people globally.

As part of our commitment to society, we consider it essential to identify how our science can bring the greatest benefit, especially for vulnerable communities. We have therefore integrated a specific pillar into our CSR strategy: R&D for unmet needs. Our approach is applicable to General Medicines, Vaccines and Specialty Care Global Business Units (GBUs) and to all countries where the company operates, but excludes Opella, Sanofi's Consumer Healthcare unit.

### Contribute to sleeping sickness disease elimination in 2030

We have been collaborating with the World Health Organization (WHO) since 2001 on eliminating sleeping sickness, or Human African Trypanosomiasis (HAT), by 2030. Sleeping sickness is a neglected tropical disease, which affects mostly poor populations living in remote rural areas of sub-Saharan Africa. If left untreated, the parasitic disease is usually fatal. Since the start of our collaboration with the WHO, the number of cases of sleeping sickness has fallen by 97%, from 26,950 in 2001 to 699 in 2023, dropping below 1,000 for the sixth consecutive year.

We collaborate with the Drugs for Neglected Diseases initiative (DNDi) to develop a new all-oral monotherapy, fexinidazole, which was first approved at the end of 2018 in the Democratic Republic of Congo (DRC). While previous treatments required long hospitalizations and intravenous administration, this new, all-oral monotherapy reduces treatment to a ten-day once-a-day treatment that is effective in both the first and the second stages of the disease in adults and children aged six years and older and weighing 20 kg or more. Fexinidazole also received WHO prequalification in March 2019, and was approved in Uganda and the United States in 2021. It has been included in the WHO Essential Medicines List and WHO sleeping sickness treatment guidelines, as a first-line treatment for first stage and non-severe second stage. The European Medicines Agency's (EMA) Committee for Medicinal Products for Human Use (CHMP) has also extended the indication of fexinidazole for the treatment, in patients suffering Trypanosoma brucei (T.b.) rhodesiense sleeping sickness, an acute and lethal form of this parasitic disease found in Eastern and Southern Africa. This is the first full oral treatment for these patients whose only option previously had been an arsenic-based treatment.

In September 2020, Sanofi and DNDi signed an agreement to develop and roll out acoziborole, a second innovative sleeping sickness treatment. Once approved, the treatment could be administered in a single dose at the point of diagnosis making it a game-changer to support the sustainable elimination of the disease. This new chemical entity has been tested in Phase II/III clinical studies in DRC and Guinea. The results, which were published in The Lancet Infectious Diseases medical journal in November 2022, showed that the 18-month treatment success rate for acoziborole was 95% in late-stage Trypanosoma brucei gambiense (g-HAT) patients, corresponding to the best results from studies with existing treatments (94%). In addition, 100% of the 41 patients with early-stage q-HAT were considered as treatment successes at all timepoints. The study shows that acoziborole has a favorable safety profile, with no significant drug-related safety signals being reported. These pivotal results will form the basis of Sanofi's dossier submission to the European Medicines Agency (EMA), and represent another milestone in the quest to eliminate sleeping sickness.

Through our partnership with the WHO, we support disease management, including screening of populations, disease awareness campaign, capacity building, and drug donation. At the end of 2024, Sanofi's total contribution to this WHO program was \$120 million. The partnership was renewed in 2020 for another five years, with a commitment to contribute \$5 million annually from Sanofi. The program includes controls over the quality and use of the products, as well as distribution, which is handled jointly with Médecins Sans Frontières (MSF). This long-term commitment is key to achieving the sustainable elimination of sleeping sickness by 2030, as per the WHO Neglected Tropical Disease roadmap.

As of 2022, the Neglected Tropical Diseases program is managed by Foundation S by Sanofi. Foundation S is committed to donating acoziborole until sleeping sickness is eliminated worldwide.

### **Develop innovative treatments for childhood cancer**

Cancer remains the leading cause of death from disease in children in the developed world, and most of the medicines we use to treat childhood cancer today were approved decades ago. While some progress has been made in improving survival rates for certain types of childhood cancer, there remains an unmet medical need, with many survivors experiencing severe long-term side effects. Developing innovative treatments for children with cancer is challenging due to the rarity of the disease coupled with its distinct biological characteristics and historic misconceptions regarding the ethics of conducting clinical trials in pediatric populations. Although perceptions have evolved over time and new legislation to either incentivize or require pediatric studies now exists in the US and Europe, pediatric oncology still lags behind adult oncology in therapeutic innovation and the median time between the first adult trial and the first child trial for a given compound is 6.5 years.

### **Develop Global Access Plans for our innovation pipeline**

We are committed to accelerating broader patient access to our future innovations by developing Global Access Plans (GAPs) at an early stage of clinical development for all our R&D pipeline assets. Our ambition is to make our innovative products available within two years after first launch wherever we can make an impact on patients, and when external conditions allow.

Our GAPs systematically explore the opportunity for establishing access models and conditions as early as Phase II, after proof of concept (PoC), in order to consider all potential solutions for broader patient access at scale beyond the usual commercial approaches in baseline countries:

- focusing on geographies where a significant unmet medical need remains, and the healthcare ecosystem can support safe integration of innovations into clinical practices;
- adapting actions alongside the value chain; R&D, manufacturing and supply, regulatory pathways, pricing and reimbursement conditions, as well as building health system infrastructure and capabilities to ensure patients have effective access to care and appropriate use of our products; and
- developing access models tailored to local specificities.

The responsibility for developing a GAP lies in the business units for their respective assets, including key global functions and markets specialists, and GAPs are fully embedded in the global brand strategy. Our methodology enables the business to define which assets or countries to prioritize, and which offering is best suited for these assets and geographies. The methodology includes all the steps, implications, and issues to solve alongside the value chain including R&D, and more particularly clinical trial site localization; manufacturing and supply; regulatory pathways; legal considerations; healthcare capabilitybuilding; and the go-to-market model.

As of December 2024, 12 Global Access Plans have been initiated or developed, covering more than 15 indications. We will continue to develop GAPs for future assets when they reach Phase II of clinical development.

## **Patent Management**

Intellectual property rights established by the World Trade Organization have performed a critical role in stimulating R&D. By sharing risks and rewards, this system has created the appropriate environment for delivering the greatest returns for society not just for today, but also for tomorrow.

Sanofi believes that patents are a fundamental incentive for driving innovation in the pharmaceutical sector. The development of new medicines and vaccines is a risky, costly, and lengthy process. Patents are an essential incentive for pharmaceutical companies to invest in research & development to address unmet medical needs. IP policies therefore need to be safeguarded. While patents by themselves should not be considered a barrier for access, Sanofi believes that being transparent and flexible with our patents can help address pressing health challenges in developing countries.

In order to enable access to our medicines and vaccines:

- Sanofi makes patent status of their Essential Medicines and Vaccines in developing countries publicly available (see Annex I);
- Sanofi does not file patent applications or enforce patent rights in all Least Developed Countries (LDCs) and Low-Income Countries (LICs);
- Sanofi does not file or enforce patents in several Lower-Middle-Income Countries (LMICs) and Upper-

- Middle-Income Countries (UMICs). See Annex II for the complete list of countries;
- Sanofi supports implementation of the 2001 WTO Doha Declaration on TRIPS and Public Health and the appropriate use of the flexibilities therein intended to protect public health;
- Sanofi supports the transition period that LDCs are exempted from obligations under the Agreement on Trade Relate Aspects of Intellectual Property Rights (TRIPS Agreement) regarding pharmaceutical patents until January 1, 2033. We support this exemption of LDCs and an extension of the exemption beyond 2033;
- Sanofi acknowledges the value of voluntary licensing agreements and patent pools for access to medicines in developing countries. We would consider joining patent pools and engaging in voluntary licensing if relevant to our portfolio, and aimed at accelerating access to medicines and vaccines in lowand middle- income countries;
- Sanofi respects compulsory licensing as a short-term and targeted measure where urgent access to patented medicines is critical to maintaining public health, and no appropriate alternative is available. We believe that compulsory licenses should only be used in extraordinary and very limited circumstances, such as meeting a health crisis or emergency; and
- Sanofi respects a formal exemption from patent infringement for activities which are undertaken as part of the regulatory review process: "[c]onducting the necessary studies and trials with a view to the application of paragraphs 1 to 4 [i.e. bioequivalents and biosimilars] and the consequential practical requirements shall not be regarded as contrary to patent rights or to supplementary protection certificates for medicinal products." (Bolar exemption, Directive 2004/27/EC. Article 10(6)).

Annex I - Patent Status of Sanofi's Essential Medicines and Vaccines in Developing Countries

Annex II - Developing Countries in which Sanofi does not file or enforce patents\*

\* For products where Sanofi solely owns and controls the patent rights

Annex I: Sanofi Products $^{(1)}$  as of 2023 listed on the WHO Essential Medicine List (EML, 2023)

MEDICINES			VACCINES		
Product	Active Ingredient(s)	Patent Rights	Product	Vaccine Type	Patent Rights
AGEN®	Amlodipine	No	ACTHIB®	Haemophilus influenzae	No
APPROVEL®	Irbesartan <sup>(2)</sup>	No <sup>(4)</sup>		polysaccharide type b	
ARSOBAL®	Melarsoprol	No		conjugated to tetanus	
ASAQ Winthrop®	Artesunate/ amodiaquine	No	ADACEL®	protein (PRP-T) Diphtheria, Tetanus, Pertussis (acellular, component) Vaccine (adsorbed, reduced antigen(s)	No
AZITRHOMYCIN	Azithromycin dihydrate	No			
CAPTEA	Captopril/Hydrochlorothia zide	No			
CERUBIDINE®	Daunorubicin	No		content)	
CETAPIN®	Metformin hydrochloride	No		Dengue live attenuated	
CIDOMYCIN®	Gentamicin	No	DENGVAXIA®	tetravalent chimeric	No (5)
DEPAKINE®	Valproate sodium	No	]	vaccine	
EFAVIRENZ	Efavirenz	No		Diphtheria, tetanus,	
ELOXATIN®	Oxaliplatin	No		pertussis (acellular,	No <sup>(6)</sup>
ENOXAPARIN	Enoxaparin	No		component), hepatitis B	
EURELIX	Piretanide	No		(rDNA), poliomyelitis	
FEXINIDAZOLE Winthrop	Fexinidazole	No <sup>(3)</sup>	HEXAXIM®	(inactivated) and <i>Haemophilus</i>	
FLUDARA®	Fludarabine phosphate	No		<i>influenzae</i> type b	
GLUCANTIME®	Meglumine antimoniate	No		conjugate vaccine	
LANTUS®	Insulin glargine	No <sup>(4)</sup>		(adsorbed)	
MALOCIDE®	Pyrimethamine	No		Meningococcal (Groups A,	No <sup>(6)</sup>
PLAVIX®	Clopidogrel	No	MENACTRA®	C, Y and W-135)	
PRIFTIN®	Rifapentine	No	112101011111	Polysaccharide Diphtheria	
PRIMAQUINE	Primaquine diphosphate	No		Toxoid Conjugate Vaccine	
PYRAZINAMIDE	Pyrazinamide	No		Diphtheria, tetanus,	
QUINIMAX®	Quinine	No		pertussis (acellular, component), poliomyelitis (inactivated) vaccine and <i>Haemophilus</i> type b conjugate vaccine,	No
RIFADIN®	Rifampicin	No	PENTAXIM®		
RIFATER®	Rifampicin/ isoniazid/ pyrazinamide	No			
RIFINAH®	rifampicin/ isoniazid	No		adsorbed	
RISORDAN®	Isosorbide dinitrate	No	STAMARIL	Yellow Fever Vaccine	No
TAVANIC®	Levofloxacin	No			
TAXOTERE®	Docetaxel	No			
TENOFOVIR	Tenofovir disoproxil	No	TETAVAX®	Purified tetanus toxoid (PTT)	No
TRITAZIDE®	Ramipril/Hydrochlorothiaz ide	No			
TRIAPIN®	Ramipril/Felodipine	No	TETRAXIM®	Booster vaccine	No
VERAPAMIL	Verapamil	No			

TYPHIM VI®	Typhoid polysaccharide vaccine	No
VAXIGRIPTETRA®	Quadrivalent influenza vaccine (split virion, inactivated)	No
VAXIGRIP®	Influenza vaccine (split virion, inactivated)	No
VERORAB®	Rabies vaccine, inactivated	No

DEVICES FOR LANTUS ADMINISTRATION			
Product		Patent Rights	
ALLSTAR®	Reusable pen	No <sup>(4)</sup>	
SOLOSTAR®	Prefilled pen	No <sup>(4)</sup>	

- (1) Sanofi products encompass the products marketed and/or distributed in 2024 by Sanofi and its affiliates. Trademarks followed with ® mean that the trademark is registered in one or some of the countries listed in Annex II. Depending on the countries, (i) some products are associated with other trademarks, not listed in Annex I and (ii) some trademarks are used under licensing by Sanofi. FLUDARA® is a registered trademark of Alcafleu. TAVANIC® is a registered trademark of Daiichi Sankyo limited. CETAPIN® and CIDOMYCIN® are registered in countries other than those listed in Annex II.
- (2) Products followed with  $^{(2)}$  are considered clinically equivalent medicines to a representative example within a pharmacological class listed on the 2023 WHO EML, as indicated by the square box symbol. All other products are listed on the 2023 WHO EML as core essential medicines.
- (3) For countries via ARIPO, actions have been taken in June 2020 to effectively abandon patents directed to Fexinidazole. Therefore, the "no patent" statement applies to the product FEXINIDAZOLE Winthrop for countries listed in Annex II.
- (4) The "no patent" statement applies to the products for countries listed in Annex II.
- (5) For Lao, action has been taken in July 2021 to effectively abandon the patent covering DENGVAXIA®. Therefore, the "no patent" statement applies to the product DENGVAXIA® for countries listed in Annex II.
- (6) For Syria, Tajikistan and countries via **ARIPO** or via **OAPI**, actions have been taken in November 2019 to effectively abandon patents or patent applications directed to HEXAXIM® or MENACTRA®. Therefore the "no patent" statement applies to the products HEXAXIM® and MENACTRA® for countries listed in Annex II.

For all other products listed with no patent in the present Annex I, this statement applies for countries listed in Annex II and for all other countries worldwide.

### **KEYS**

**ARIPO.** 'African Regional Intellectual Property Organization' Countries:

Botswana; Gambia; Ghana; Kenya; Lesotho; Liberia; Malawi; Mozambique; Namibia; Rwanda; Sierra Leone; Sudan; Swaziland; Tanzania; Uganda; Zambia and Zimbabwe.

**OAPI**. 'Organisation Africaine de la Propriété Intellectuelle' Countries:

Benin; Burkina Faso; Cameroon; Central African Rep.; Chad; Comoros; Congo, Rep.; Côte d'Ivoire; Equatorial Guinea; Gabon; Guinea; Guinea-Bissau; Mali; Mauritania; Niger; Senegal and Togo.

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# Annex II **Developing Countries in Which Sanofi Does not File or Enforce Patent**

Country	UN Classification (2024)	World Bank Classification (July 2024)
Micronesia, Fed. Sts.	NO	LMIC
Cambodia	LDC	LMIC
Kiribati	LDC	LMIC
Korea, Dem. Rep	NO	LIC
Lao PDR	LDC	LMIC
Myanmar	LDC	LMIC
Mongolia	NO	UMIC
Papua New Guinea	NO	LMIC
Solomon Islands	LDC	LMIC
Timor-Leste	LDC	LMIC
Tonga	NO	UMIC
Tuvalu	LDC	UMIC
Vanuatu	NO	LMIC
Samoa	NO	LMIC
Tajikistan	NO	LMIC
Belize	NO	UMIC
Guyana	NO	HIC
Haiti	LDC	LMIC
Suriname	NO	UMIC
Djibouti	LDC	LMIC
Iraq	NO	UMIC
Palestine, State of (West Bank and Gaza)	NO	LMIC
Syrian Arab Rep.	NO	LIC
Yemen, Rep.	LDC	LIC
Afghanistan	LDC	LIC
Bangladesh	LDC	LMIC
Bhutan	NO	LMIC
Maldives	NO	UMIC
Nepal	LDC	LMIC
Angola	LDC	LMIC
Burkina Faso	LDC	LIC
Burundi	LDC	LIC
Benin	LDC	LMIC
Botswana	NO	UMIC
Congo, Dem. Rep.	LDC	LIC
Central African Rep.	LDC	LIC

Countries	UN	World Bank
Country	Classification (2024)	Classification (July 2024)
Congo, Rep.	NO	LMIC
Côte d'Ivoire	NO	LMIC
Cameroon	NO	LMIC
Cape Verde	NO	LMIC
Eritrea	LDC	LIC
Ethiopia	LDC	LIC
Gabon	NO	UMIC
Ghana	NO	LMIC
Gambia, The	LDC	LIC
Guinea	LDC	LMIC
Equatorial Guinea	NO	UMIC
Guinea-Bissau	LDC	LIC
Comoros	LDC	LMIC
Liberia	LDC	LIC
Lesotho	LDC	LMIC
Madagascar	LDC	LIC
Mali	LDC	LIC
Mauritania	LDC	LMIC
Malawi	LDC	LIC
Mozambique	LDC	LIC
Namibia	NO	UMIC
Niger	LDC	LIC
Rwanda	LDC	LIC
Sudan	LDC	LIC
Sierra Leone	LDC	LIC
Senegal	LDC	LMIC
Somalia	LDC	LIC
South Sudan	LDC	LIC
São Tomé and Principe	NO	LMIC
Swaziland (Eswatini)	NO	LMIC
Chad	LDC	LIC
Togo	LDC	LIC
Tanzania	LDC	LMIC
Uganda	LDC	LIC
Zambia	LDC	LMIC
Zimbabwe	NO	LMIC

**LDC:** Least Developed Country, UN Human Development Index, 2024 . LIC: Low Income Country, World Bank income classifications, July 2024.

LMIC: Lower middle-income country, World Bank income classifications, July 2024.

**UMIC:** Upper middle-income country, World Bank income classifications, July 2024