

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
26 September 2024 (26.09.2024)



(10) International Publication Number
WO 2024/196271 A2

(51) International Patent Classification:

C08B 37/08 (2006.01) *C08L 89/06* (2006.01)
C08H 1/06 (2006.01) *B29C 64/40* (2017.01)
C08L 5/08 (2006.01) *C12N 5/00* (2006.01)

LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE,
SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, KM, ML, MR, NE, SN, TD, TG).

(21) International Application Number:

PCT/PL2024/050023

(22) International Filing Date:

22 March 2024 (22.03.2024)

(25) Filing Language:

Polish

(26) Publication Language:

English

(30) Priority Data:

23461537.5 23 March 2023 (23.03.2023) EP

(71) Applicant: **POLBIONICA SPOLKA Z OGRANIC-
ZONA ODPOWIEDZIALNOSCIA** [PL/PL]; Aleja Pry-
masa Tysiaclecia 79A, 01-242 Warszawa (PL).

(72) Inventors: **DOMANSKI, Sylwester**; ul. Zupnicza 25A/80,
03-821 Warszawa (PL). **ZAKRZEWSKA, Agnieszka**; ul.
Kobyła Kepa 2, 82-110 Sztutowo (PL). **WSZOLA, Michał**;
ul. Obwodowa 11L, 03-532 Warszawa (PL). **KLAK, Mar-
ta**; ul. O.M.Kolbe 9D/1, 64-920 Pila (PL).

(74) Agent: **DOBRZANSKI, Jan**; AOMB Polska sp. z o.o.,
Rondo Daszynskiego 1, 28th floor, 00-843 Warszawa (PL).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ,
CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG,
KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY,
MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA,
NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO,
RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS,
ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, CV,
GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST,
SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ,
RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ,
DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT,

Published:

- without international search report and to be republished
upon receipt of that report (Rule 48.2(g))
- in black and white; the international application as filed
contained color or greyscale and is available for download
from PATENTSCOPE

WO 2024/196271 A2

(54) Title: METHOD OF FUNCTIONALIZATION OF A BIOPOLYMER AND METHOD OF CROSS-LINKING THEREOF

(57) Abstract: The invention relates to a method of functionalizing a biopolymer in which a biopolymer having -OH or -NH₂ groups is reacted with at least one compound containing at least one C=C or C≡C bond and a chromophore group absorbing UV-Vis radiation directly adjacent to this bond. The invention also relates to a method for obtaining a solid biopolymer material, in which the functionalized biopolymer obtained by the method specified above is subjected to reversible cross-linking upon exposure to light in the UV-VIS range. The invention also relates to the use of a functionalized biopolymer as a support material for 3D bioprinting, as well as the use of a functionalized biopolymer for the production of structures selected from spheroids, organoids, artificial organs, coatings, and tissue models.