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(54) Title: TRANSDERMAL PATCHES HAVING IONIZED BEAM CROSSLINKED POLYMERS AND IMPROVED RE-
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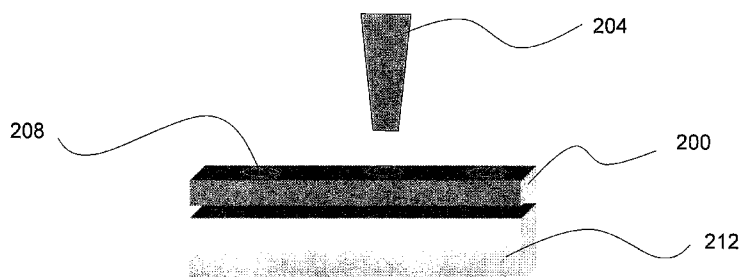


FIG. 3

(57) Abstract: Crosslinked hydrogel-based transdermal pharmaceutical formulations. The hydrogel transdermal formulations. Trans-
dermal patches are useful for administering a variety of drugs to patients. The transdermal patches here employ crosslinked-hydro-
gels generated through irradiation, thus eliminating any residual effects associated with chemical- or UV-based crosslinking proced-
ures. The transdermal patches may be formed from a variety of high-molecular weight polymeric compounds and include substantial
levels of water to improve skin tolerance by the patient. The transdermal patches may also include transcutol as a solvent for the
drug, which has been found to increase the effectiveness of drug delivery. The present disclosure also provides for methods of load-
ing a drug into a transdermal formulation after the crosslinking of the hydrogel, thus improving stability and bioavailability through
avoiding exposure of the drug to the radiation used in the crosslinking procedure. The transdermal patches here are particularly ef-
fective in delivering lidocaine to patients in need thereof.



INTERNATIONAL SEARCH REPORT

International application No.
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A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A61F 13/00 (2012.01)

USPC - 424/449

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
USPC : 424/449

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC : 424/449, 424/448, 424/443, 424/485, 424/486, 424/487, 424/488

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

*** Databases: WEST (PGPB, USPT, USOC, EPAB, JPAB); Google, Google Scholar *** Search Terms Used: Alliqua, Harriton, Robb, Harland, hydrogel, transdermal, radiation, transcutol, diethylene glycol monoethyl ether, lidocaine, glycol, fabric, polyethylene oxide, polyvinyl pyrrolidone, polyethylene glycol, water, aqueous, mixture, polymer, polymeric,

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2002/0026005 A1 (Munro) 28 February 2002 (28.02.2008), especially para [0013], [0022], [0026]-[0028], [0078], [0081]-[0082], [0084], [0086], [0113], [0117], [0123], [0125], [0137].	1-20
Y	US 2009/0258060 A1 (Cleary et al.) 15 October 2009 (15.10.2009), especially para [0011], [0017], [0123], [0126], [0130], [0153].	1-18
Y	US 2009/0053290 A1 (Sand et al.) 26 February 2009 (26.02.2009), especially para [0019], [0039], [0049], [0051], [0241], [0313], [0317], [0331], [0334].	13, 19-20
A	US 2005/0112151 A1 (Hornig) 26 May 2005 (26 May 2005), entire document	1-20
A	US 2004/0242770 A1 (Feldstein et al.) 02 December 2004 (02.12.2004), entire document	1-20



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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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