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(54) Title: DELIVERY OF BMP-7 AND METHODS OF USE THEREOF

(57) Abstract: The present invention generally relates to delivery of BMP-7 or functional variants or functional fragments thereof and/or a BMP-7 agonist and methods of use thereof. In some embodiments, methods and devices are provided for delivery of BMP-7 or functional variants or functional fragments thereof and/or a BMP-7 agonist to a patient. In some cases, the BMP-7 or functional variants or functional fragments thereof and/or a BMP-7 agonist may be released in controlled fashion from a device in fluid communication with a patient. In some embodiments, the BMP-7 or functional variants or functional fragments thereof and/or a BMP-7 agonist may be expressed by cells within a device. In other embodiments, methods are provided for improving the function of devices containing renal proximal tubule cells. For example, in some embodiments, exposure of renal proximal tubule cells to BMP-7 or functional variants or functional fragments thereof and/or a BMP-7 agonist may be used to inhibit disruption of cell layers comprising renal proximal tubule cells. In another embodiment, exposure of renal proximal tubule cells to BMP-7 or functional variants or functional fragments thereof and/or a BMP-7 agonist may be used to inhibit trans- and de-differentiation of renal proximal tubule cells. In another embodiment, exposure of renal proximal tubule cells to BMP-7 or functional variants or functional fragments thereof and/or a BMP-7 agonist may be used to improve renal proximal tubule cell functions.

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