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(71) Applicant: **VISION GLOBAL HOLDINGS LTD.** [CN/CN]; Flat 2301, 23/F Fu Fai Commercial Centre, 27 Hillier Street, Sheung Wan, Hong Kong (CN).

(72) Inventors: **WONG, Bing Lou**; 3592 S. Mall Street, Irvine, CA 92606 (US). **WAI, Norman Fung Man**; 3906 West 19th Ave, Vancouver, B.C. V6S 1E1 (CA). **KWOK, Sui Yi**; Flat 2907, 29/F, Pik Wai House, Shek Pai Wan Estate, Aberdeen, Hong Kong (CN). **LEUNG, Yun Chung**; Flat A, 9/F, Block 2, The Great Hill, 8 Tung Lo Wan Hill Road, Shatin, N.T., Hong Kong (CN).

(74) Agent: **YIP, Sam T.**; Ella Cheong (Hong Kong) Limited, 5001 Hopewell Centre, 183 Queen's Road East, Wan Chai, Hong Kong (CN).

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(54) Title: PHARMACEUTICAL COMPOSITION COMPRISING ALBUMIN-BINDING ARGININE DEIMINASE FOR CANCER TARGETING TREATMENT

(57) Abstract: The present invention provides a pharmaceutical composition containing albumin-binding arginine deiminase fusion protein (AAD) for treating cancer or other arginine-dependent diseases. The AAD fusion protein can be purified from both soluble and insoluble fractions of crude proteins, it binds to human serum albumin (HSA) and has its high activity with longer half life for efficient depletion of arginine in cancer cells. The specific activities of wild-type ADI and AAD in the present invention are 8.4 and 9.2 U/mg (at physiological pH 7.4), respectively. The AAD used in the present invention can be used in the treatment of various cancers (e.g. pancreatic cancer, leukemia, head and neck cancer, colorectal cancer, lung cancer, breast cancer, liver cancer, nasopharyngeal cancer, esophageal cancer, prostate cancer, stomach cancer & brain cancer) and curing arginine-dependent diseases. The composition can be used alone or in combination with at least one chemotherapeutic agent to give a synergistic effect on cancer treatment and/or inhibiting metastasis.

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