

Abstract

**COMPOUND TARGETING PROSTATE SPECIFIC MEMBRANE ANTIGEN, AND
PREPARATION METHOD AND APPLICATION THEREOF**

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The present disclosure provides a compound targeting prostate specific membrane antigen (PSMA), wherein the compound has the following structure shown in Formula (I); R_1 is a compound structure targeting prostate specific membrane antigen; L_1 is $-(X)_n-(CH_2)_m-(Y)_q-$, X and Y are independently selected from lysine, glutamic acid or a derivative structure containing lysine and glutamic acid, n is an integer from 0 to 12, m is an integer from 0 to 60, q is an integer from 0 to 12, and each CH_2 may be individually substituted with $-O-$, $-NH(CO)-$, or $-(CO)-NH-$; L_2 is $-(CH_2)_p-$, p is an integer from 0 to 30, and each CH_2 may be individually substituted with $-O-$, $-NH(CO)-$, or $-(CO)-NH-$; and R_2 is a nuclide chelating group. The present disclosure also provides a radiolabeled complex based on the structure of the compound. The compound and the radiolabeled complex have appropriate blood circulation time, high uptake in tumors and long retention time, and are suitable for nuclide therapy and imaging of tumors with high expression of PSMA.

