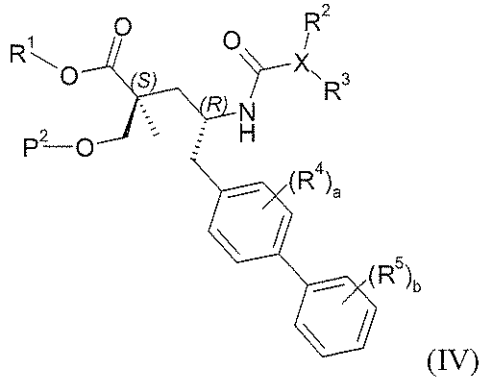
more intermediates are purified by chromatography. There are several advantages to developing processes where such purification steps are not necessary. This invention addresses that need.

SUMMARY ~~OF THE INVENTION~~

The present ~~invention~~ disclosure relates to intermediates and improved processes for preparing intermediates useful for preparing compounds of formula IV

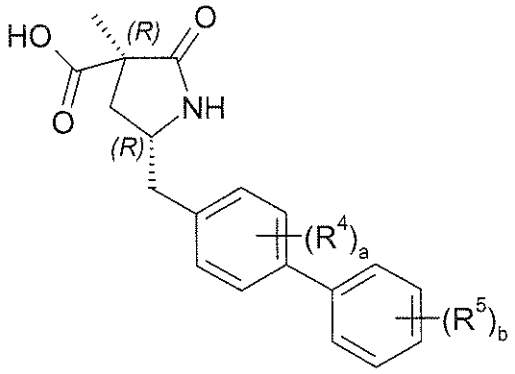


(IV)

or a tautomer or salt thereof, where R^1-R^5, a, b, X and P^2 are as defined herein.

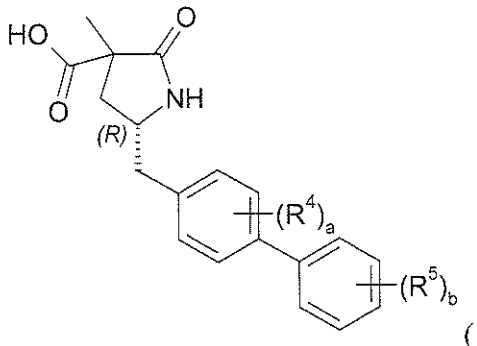
In one particular embodiment, the ~~invention~~ present disclosure relates to processes for preparing intermediates useful for preparing *(2S,4R)*-5-biphenyl-4-yl-2-hydroxymethyl-2-methyl-4-[(1H-[1,2,3]triazole-4-carbonyl)-amino]-pentanoic acid 5-methyl-2-oxo-[1,3]dioxol-4-ylmethyl ester and tautomers thereof.

One aspect of the ~~invention~~ present disclosure relates to a process for preparing a compound of formula I:



(I)

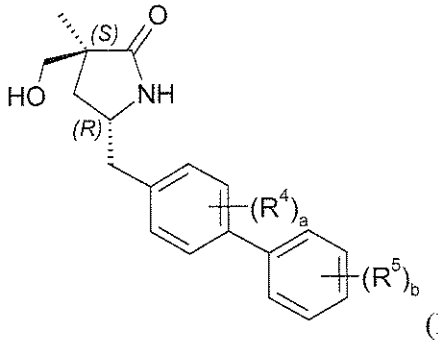
or a salt thereof, where a is 0 or 1; R^4 is selected from halo, $-CH_3$, $-CF_3$, and -CN; b is 0 or an integer from 1 to 3; and each R^5 is independently selected from halo, -OH, $-CH_3$, $-OCH_3$, and $-CF_3$~~where R^4, R^5, a, and b are as defined herein~~; the process comprising the step of reslurrying a compound of formula (1):



(1)

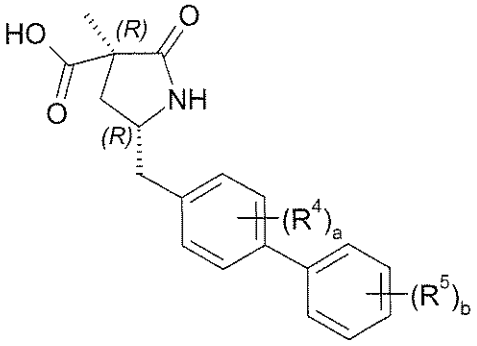
in an ether solvent to form a compound of formula I or a salt thereof.

Another aspect of the ~~invention~~ present disclosure relates to a process for preparing a compound of formula IIa:



(IIa)

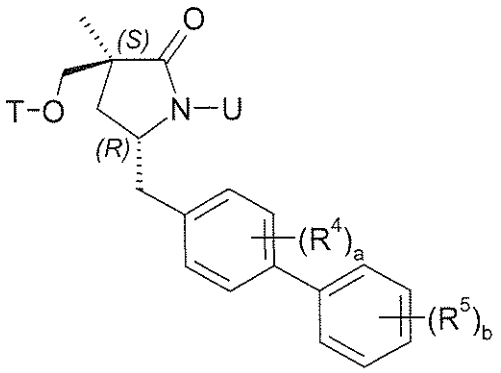
or a salt thereof, where a is 0 or 1; R^4 is selected from halo, $-CH_3$, $-CF_3$, and -CN; b is 0 or an integer from 1 to 3; and each R^5 is independently selected from halo, -OH, $-CH_3$, $-OCH_3$, and $-CF_3$~~where R^4, R^5, a, and b are as defined herein~~; the process comprising the steps of (a) activation of the carboxyl group of a compound of formula I:



(I);

and (b) reacting the resulting product with a reducing agent to form a compound of formula IIa or a salt thereof.

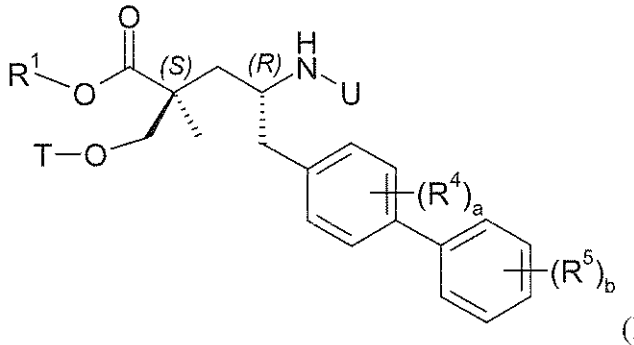
Another ~~aspect~~ embodiment of the ~~invention~~ present disclosure relates to intermediates used in the processes of the ~~invention~~present disclosure. In one such aspect of the ~~invention~~present disclosure, the intermediate has formula (II):



(II)

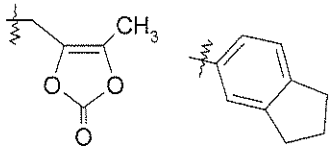
where: a is 0 or 1; R^4 is selected from halo, $-CH_3$, $-CF_3$, and -CN; b is 0 or an integer from 1 to 3; and each R^5 is independently selected from halo, -OH, $-CH_3$, $-OCH_3$, and $-CF_3$; T is H or P^2, where P^2 is an alcohol protecting group; and U is H or P^3, where P^3 is an amino protecting group; or a salt thereof~~, where R^4, R^5, a, b, T and U are as defined herein~~.

In another aspect of the ~~invention~~present disclosure, the intermediate has formula (III):

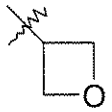


(III)

where: R^1 is selected from H, $-C_{1-8}$alkyl, $-C_{1-3}$alkylene-C_{6-10}aryl, $-[(CH_2)_2O]_{1-3}CH_3$, $-C_{1-6}$alkylene-$OC(O)R^{10}$, $-C_{1-6}$alkylene-$NR^{11}R^{12}$, $-C_{1-6}$alkylene-$C(O)R^{13}$,



$-C_{0-6}$alkylenemorpholinyl, $-C_{1-6}$alkylene-SO_2-C_{1-6}alkyl, , , and

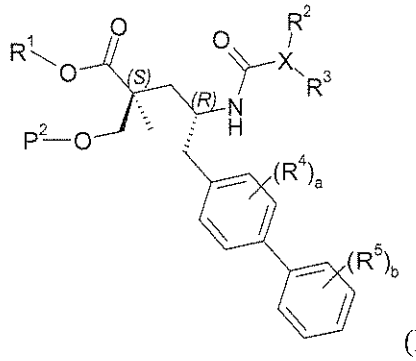


; R^{10} is selected from $-C_{1-6}$alkyl, -O-C_{1-6}alkyl, -O-C_{3-7}cycloalkyl, $-CH[CH(CH_3)_2]$-NH_2, and $-CH[CH(CH_3)_2]$-NHC(O)O-C_{1-6}alkyl; R^{11} and R^{12} are $-C_{1-6}$alkyl or are taken together as $-(CH_2)_{3-6}$-, -C(O)-$(CH_2)_3$-, or $-(CH_2)_2O(CH_2)_2$-; R^{13} is selected from -O-C_{1-6}alkyl, -O-benzyl, and $-NR^{11}R^{12}$; a is 0 or 1; R^4 is selected from halo, $-CH_3$, $-CF_3$, and -CN; b is 0 or an integer from 1 to 3; each R^5 is independently selected from halo, -OH, $-CH_3$, $-OCH_3$, and $-CF_3$; P^2 is an alcohol protecting group; U is H or P^3, where P^3 is an amino protecting group; and where each alkyl

group in R^1 is optionally substituted with 1 to 8 fluoro atoms; or a salt thereof~~, where R^1, R^4, R^5, a, b, T and U are as defined herein~~.

DETAILED DESCRIPTION OF THE INVENTION

The invention relates to processes for preparing compounds of formula IV:



(IV)

or a tautomer or salt thereof. The R^1 moiety is selected from:

H;

$-C_{1-8}$alkyl, e.g., $-CH_3$, $-CH_2CH_3$, $-(CH_2)_2CH_3$, $-CH(CH_3)_2$, $-CH_2CH(CH_3)_2$, $-(CH_2)_3CH_3$, $-(CH_2)_4CH_3$, $-(CH_2)_2CH(CH_3)_2$, $-(CH_2)_5CH_3$, and $-(CH_2)_6CH_3$;

$-C_{1-3}$alkylene-C_{6-10}aryl, e.g., benzyl;

$-[(CH_2)_2O]_{1-3}CH_3$, e.g., $-(CH_2)_2OCH_3$ and $-[(CH_2)_2O]_2CH_3$;