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- (54) **INHIBITORS OF BRUTON'S TYROSINE KINASE**
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Related U.S. Application Data

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(51) **Int. Cl.**

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A01N 43/90 (2006.01)

C07D 473/00 (2006.01)

(52) **U.S. Cl.** **514/263.22; 514/263.2; 544/277**

(58) **Field of Classification Search** None
See application file for complete search history.

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(57) **ABSTRACT**

Disclosed herein are compounds that form covalent bonds with Bruton's tyrosine kinase (Btk). Also described are irreversible inhibitors of Btk. Methods for the preparation of the compounds are disclosed. Also disclosed are pharmaceutical compositions that include the compounds. Methods of using the Btk inhibitors are disclosed, alone or in combination with other therapeutic agents, for the treatment of autoimmune diseases or conditions, heteroimmune diseases or conditions, cancer, including lymphoma, and inflammatory diseases or conditions.

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BIK	I	T	E	Y	M	A	N	G	C	L	L
BMX	V	T	E	Y	M	A	R	G	C	L	L
TEC	V	T	E	F	M	E	R	G	C	L	L
TXK	V	T	E	F	M	E	N	G	C	L	L
ITK	V	F	E	F	M	E	H	G	C	L	S
EGFR	I	T	Q	L	M	P	F	G	C	L	L
ErbB2	V	T	Q	L	M	P	Y	G	C	L	L
ErbB4	V	T	Q	L	M	P	H	G	C	L	L
JAK3	V	M	E	Y	L	P	S	G	C	L	R
BLK	V	T	E	Y	L	P	S	G	C	L	L
LCK	I	T	E	Y	M	E	N	G	S	L	V
LYN	I	T	E	Y	M	A	K	G	S	L	L
SYK	V	M	E	M	A	E	L	G	P	L	N

Fig. 1

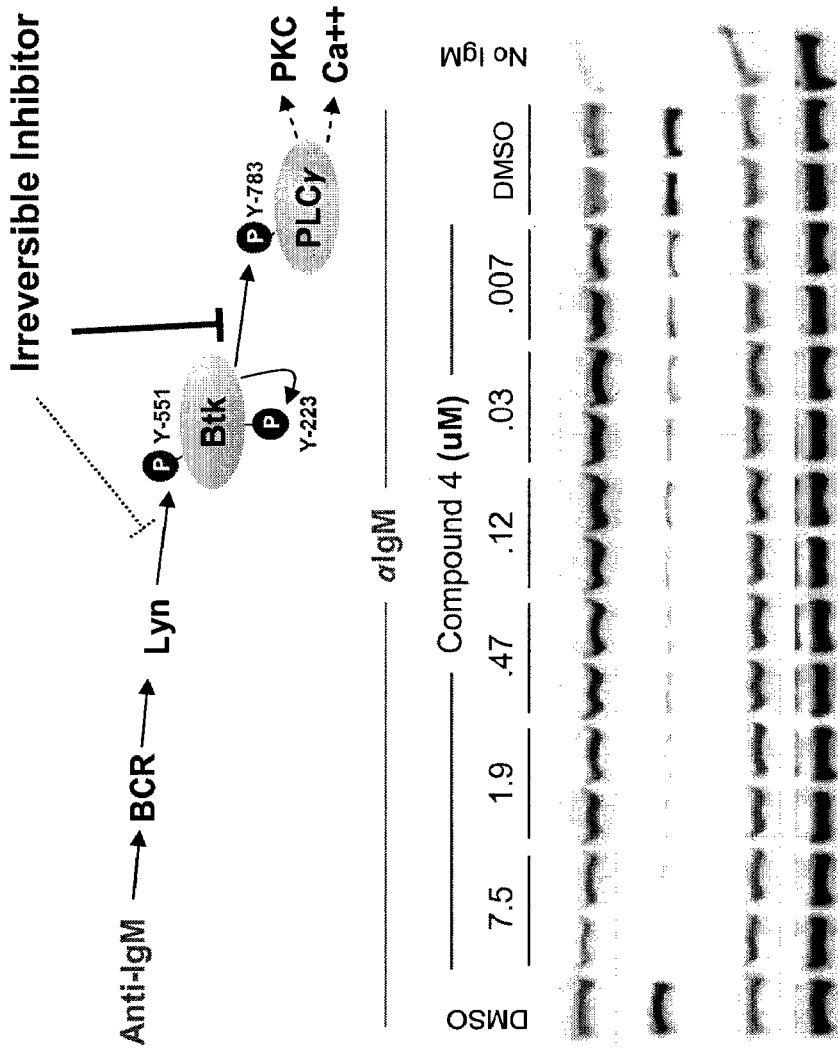
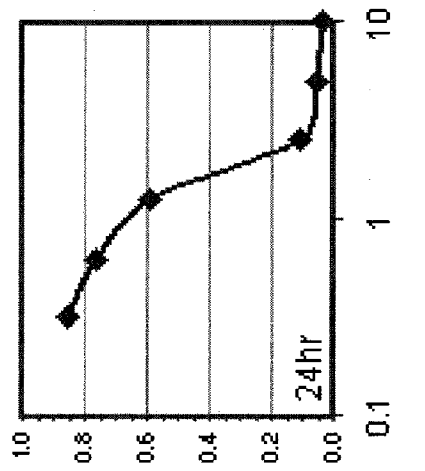
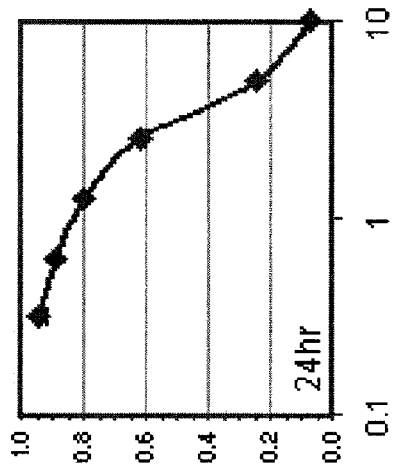
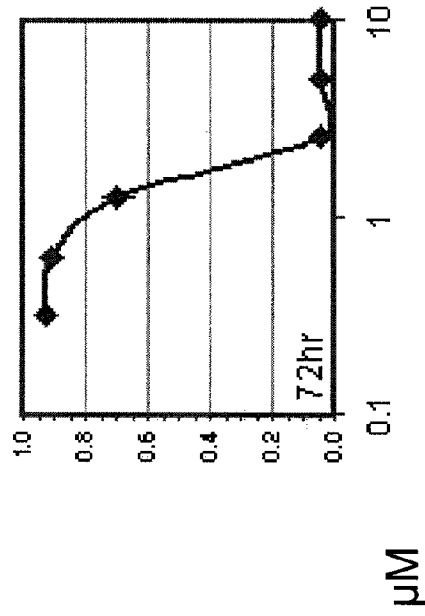
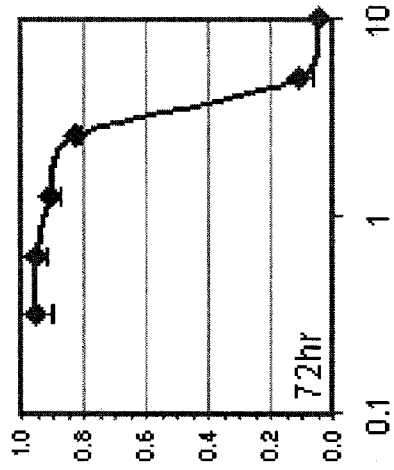


Fig. 2



Compound 4

Compound 15

Fig. 3

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