Narrative Language grammar

$\langle model \rangle$ ::= $\langle constants\_decl \rangle \langle comparts\_decl \rangle \langle compons\_decl \rangle \langle reacts\_decl \rangle \langle procs\_decl \rangle$

$\langle constants\_decl \rangle$ ::= Constants $\langle constants\_list \rangle$
$\langle comparts\_decl \rangle$ ::= Compartments $\langle comparts\_list \rangle$
$\langle compons\_decl \rangle$ ::= Components $\langle compons\_list \rangle$
$\langle reacts\_decl \rangle$ ::= Reactions $\langle reacts\_list \rangle$
$\langle procs\_decl \rangle$ ::= Narrative $\langle procs\_list \rangle$

$\langle constants\_list \rangle$ ::= $\langle constant \rangle$
| $\langle constant \rangle \langle constants\_list \rangle$
$\langle comparts\_list \rangle$ ::= $\langle compartment \rangle$
| $\langle compartment \rangle \langle comparts\_list \rangle$
$\langle compons\_list \rangle$ ::= $\langle component \rangle$
| $\langle component \rangle \langle compons\_list \rangle$
$\langle reacts\_list \rangle$ ::= $\langle reaction \rangle$
| $\langle reaction \rangle \langle reacts\_list \rangle$
$\langle procs\_list \rangle$ ::= $\langle proc \rangle$
| $\langle proc \rangle \langle procs\_list \rangle$

$\langle constant \rangle$ ::= $(\langle const \rangle, \langle quantity \rangle)$
$\langle compartment \rangle$ ::= $(\langle id \rangle, \langle compart\_name \rangle, \langle opt\_size \rangle, \langle opt\_unit \rangle, \langle opt\_dim \rangle)$
$\langle component \rangle$ ::= $(\langle name \rangle, \langle opt\_inform\_descr \rangle, \langle opt\_sites\_def \rangle,$
$\langle opt\_states\_def \rangle, \langle opt\_comparts\_def \rangle, \langle initial\_quantity \rangle)$
$\langle reaction \rangle$ ::= $(\langle id \rangle, \langle react\_type \rangle, \langle rate \rangle)$

$\langle proc \rangle$ ::= Process $\langle opt\_inform\_descr \rangle \langle events\_list \rangle$
$\langle events\_list \rangle$ ::= $\langle event \rangle$
| $\langle event \rangle \langle events\_list \rangle$
$\langle event \rangle$ ::= $(\langle id \rangle, \langle form\_descr \rangle, \langle react\_id \rangle, \langle opt\_altern\_event \rangle)$

$\langle opt\_sites\_def \rangle$ ::=
| $\langle sites\_def \rangle$
$\langle sites\_def \rangle$ ::= $\langle site\_def \rangle$
| $\langle site\_def \rangle ; \langle sites\_def \rangle$
$\langle site\_def \rangle$ ::= $\langle name \rangle : \langle state\_name \rangle : \langle is\_active \rangle$

$\langle opt\_states\_def \rangle$ ::=
| $\langle states\_def \rangle$
$\langle states\_def \rangle$ ::= $\langle state\_def \rangle$
| $\langle state\_def \rangle ; \langle states\_def \rangle$
$\langle state\_def \rangle$ ::= $\langle state\_name \rangle : \langle is\_active \rangle$

$\langle opt\_comparts\_def \rangle$ ::=
| $\langle comparts\_def \rangle$

$\langle comparts\_def \rangle$ ::= $\langle compart\_def \rangle$
| $\langle compart\_def \rangle ; \langle comparts\_def \rangle$

$\langle compart\_def \rangle$ ::= $\langle id \rangle : \langle is\_active \rangle$

$\langle initial\_quantity \rangle$ ::= $(\langle quantity \rangle, \langle opt\_reliability \rangle)$

$\langle rate \rangle$ ::= $rate\_const$
| $rate\_law$

$\langle rate\_const \rangle$ ::= $(\langle rate\_value \rangle, \langle opt\_unit \rangle, \langle opt\_reliability \rangle)$

$\langle rate\_law \rangle$ ::= fMA($quantity$)
| fMM($quantity, quantity$)
| fH($quantity, quantity, Int$)

$\langle form\_descr \rangle$ ::= $\langle event\_descr \rangle$
| if $\langle conds \rangle$ then $\langle event\_descr \rangle$

$\langle conds \rangle$ ::= $\langle cond \rangle$
| $\langle cond \rangle$ and $\langle conds \rangle$

$\langle cond \rangle$ ::= $\langle names \rangle$ is $\langle state\_name \rangle$
| $\langle names \rangle$ is not $\langle state\_name \rangle$
| $\langle names \rangle$ is in $\langle id \rangle$
| $\langle names \rangle$ is not in $\langle id \rangle$

$\langle names \rangle$ ::= $\langle name \rangle$
| $\langle name \rangle . \langle name \rangle$
| $\langle name \rangle ; \langle names \rangle$
| $\langle name \rangle . \langle name \rangle ; \langle names \rangle$

$\langle sites \rangle$ ::= $\langle name \rangle$
| $\langle name \rangle ; \langle sites \rangle$

$\langle event\_descr \rangle$ ::= $\langle complex\_name \rangle \langle bimol\_react \rangle \langle complex\_name \rangle$ on $\langle sites \rangle$
| $\langle complex\_name \rangle \langle bimol\_react \rangle \langle complex\_name \rangle$
| $\langle complex\_name \rangle \langle monomol\_react \rangle$ on $\langle sites \rangle$
| $\langle complex\_name \rangle \langle monomol\_react \rangle$
| $\langle complex\_name \rangle$ relocates to $\langle id \rangle$
| $\langle complex\_name \rangle$ degrades
| $\langle complex\_name \rangle$ degrades $\langle complex\_name \rangle$
| $\langle complex\_name \rangle$ synthesises $\langle complex\_name \rangle$
| $\langle complex\_name \rangle$ homodimerizes
| $\langle complex\_name \rangle$ dehomodimerizes
| $\langle complex\_name \rangle$ dimerizes with $\langle complex\_name \rangle$
| $\langle complex\_name \rangle$ dedimerizes from $\langle complex\_name \rangle$

⟨*complex_name*⟩	::=	⟨*name*⟩
	|	⟨*name*⟩ : ⟨*complex_name*⟩
⟨*id*⟩	::=	*Int*
⟨*opt_size*⟩	::=	
	|	*Int*|*const*
⟨*opt_unit*⟩	::=	
	|	*Str*
⟨*opt_dim*⟩	::=	
	|	*Int*
⟨*name*⟩	::=	*Ide*
⟨*opt_inform_descr*⟩	::=	
	|	*Str*
⟨*quantity*⟩	::=	*value* | *const*
⟨*value*⟩	::=	*Int* | *Real*
⟨*const*⟩	::=	*Ide*
⟨*opt_reliability*⟩	::=	
	|	*Int*
⟨*rate_value*⟩	::=	*quantity*
⟨*react_id*⟩	::=	*Int*
⟨*opt_altern_event*⟩	::=	
	|	alternative to ⟨*id*⟩
⟨*is_active*⟩	::=	*Bool*
⟨*compart_name*⟩	::=	nucleus | cytosol | exosol
	|	cellMembrane | nucleusMembrane | *Ide*
⟨*react_type*⟩	::=	phosphorylation | dephosphorylation
	|	binding | unbinding
	|	homodimerization | dehomodimerization
	|	dimerization | dedimerization
	|	activation | deactivation
	|	hydrolysis | dehydrolysis
	|	degradation | synthesis | relocation
⟨*state_name*⟩	::=	phosphorylated | bound | active | hydrolysed | dimer
⟨*bimol_react*⟩	::=	phosphorylates | dephosphorylates | binds | unbinds
	|	activates | deactivates | hydrolyses | dehydrolyses
⟨*monomol_react*⟩	::=	phosphorylates | dephosphorylates | hydrolyses | dehydrolyses