You are using countermodel generation
for classical predicate logic.

Tableau for xy(P(x) R(x,y)) :

1. ¬xy(P(x) R(x,y)) (A) 2. ¬y(P(a) R(a,y)) (¬, 1, [x/a]*) ——3. ¬(P(a) R(a,a)) (¬, 2, [y/a]) ——4. ¬P(a) (¬, 3)
[1. $\neg\exists x\forall y(P(x)\wedge R(x,y))$ (A) 2. $\neg\forall y(P(a)\wedge R(a,y))$ (¬, 1, $[x/a]$*) [ ]] The tableau is open:
The formula is refutable.

Countermodels:

Structure $\mathcal{S}_4 = \mathcal{D}, \mathcal{I}$ with
D = a
I : P↦
R↦

Structure $\mathcal{S}_5 = \mathcal{D}, \mathcal{I}$ with
D = a
I : P↦
R↦