```
ax_choice_version3  THM

⊢  (∀x:A. ∃y:B. Q(x,y)) ⟺ (∃f:(A→B). ∀x:A. Q(x,f(x)))  by Auto
|
|\
| 1. A : Type
| 2. B : Type
| 3. Q : A→B→Prop
| 4. ∀x:A. ∃y:B. Q(x,y)
| ⊢  ∃f:(A→B). ∀x:A. Q(x,f(x))
|   by FwdThru:
|      Thm*  (∀x:A. ∃y:B. Q(x,y)) ⇒ (∃f:(A→B). ∀x:A. Q(x,f(x)))
|      {ax_choice_version2}
|      on [ Hyp:-1 ]
|
.\
. 1. A : Type
. 2. B : Type
. 3. Q : A→B→Prop
. 4. ∃f:(A→B). ∀x:A. Q(x,f(x))
. 5. x : A
. ⊢  ∃y:B. Q(x,y)  by Analyze-2
. |
. 4. f : A→B
. 5. ∀x:A. Q(x,f(x))
. 6. x : A
. ⊢  ∃y:B. Q(x,y)  by Witness: f(x) THEN BackThru: Hyp:5
END
```