```
dep_ax_choice_version2  THM

⊢  (∀x:A. ∃y:B(x). Q(x,y)) ⇒ (∃f:(x:A→B(x)). ∀x:A. Q(x,f(x)))
| by Auto
|
1. A : Type
2. B : A→Type
3. Q : x:A→B(x)→Prop
4. ∀x:A. ∃y:B(x). Q(x,y)
⊢  ∃f:(x:A→B(x)). ∀x:A. Q(x,f(x))
| by Compute4 ⌜∀x:A. ⌜∃y:B(x). Q(x,y)⌝⌝ *⇒ x:A→y:B(x)×Q(x,y)
|    THEN
|    Rename4: g THEN Witness λz.1of(g(z))
|    THEN
|    Compute ⌜(λz.1of(g(z)))(x)⌝ *⇒ 1of(g(x))
|
4. g : x:A→y:B(x)×Q(x,y)
5. x : A
⊢  Q(x,1of(g(x)))  by New:w Witness4 x
|
6. w : y:B(x)×Q(x,y)
7. w = g(x)
⊢  Q(x,1of(g(x)))  by Analyze 6
|
6. y : B(x)
7. w1 : Q(x,y)
8. <y,w1> = g(x) ∈ y:B(x)×Q(x,y)
⊢  Q(x,1of(g(x)))  by RevHypSubst Hyp:8 0
|
⊢  Q(x,1of(<y,w1>))  by Compute ⌜1of(<y,w1>)⌝ *⇒ y
END
```