```
dep_ax_choice  THM

⊢  ∀B:(A→Type), Q:(x:A→B(x)→Type).
|  (∀x:A. ∃y:B(x). Q(x,y)) ⇒ (∃f:(x:A→B(x)). ∀x:A. Q(x,f(x)))
| by UnivCD
|
1. A : Type
2. B : A→Type
3. Q : x:A→B(x)→Type
4. ∀x:A. ∃y:B(x). Q(x,y)
⊢  ∃f:(x:A→B(x)). ∀x:A. Q(x,f(x))
| by Unfolds [‘all‘;‘exists‘] 4 THEN RenameVar ‘g’ 4
|
4. x:A→y:B(x)×Q(x,y)
⊢  ∃f:(x:A→B(x)). ∀x:A. Q(x,f(x))
| by Witness λz.1of(g(z)) THEN (Analyze 0) THEN (Reduce 0)
|
5. x : A
⊢  Q(x,1of(g(x)))  by Witness4 x
|
6. y : y:B(x)×Q(x,y)
7. y = g(x)
⊢  Q(x,1of(g(x)))  by Analyze 6
|
6. y1 : B(x)
7. y2 : Q(x,y1)
8. <y1,y2> = g(x)
⊢  Q(x,1of(g(x)))  by RevHypSubst 8 0
|
⊢  Q(x,1of(<y1,y2>))  by AbReduce 0
END
```