```
hexists_unique_def  THM

⊢  ∀'a:S.
|  equal
|  (exists_unique
|  ,λP:'a → hbool. and
|                    (exists(P)
|                    ,all
|                     (λx:'a. all
|                             (λy:'a. implies
|                                     (and(P(x),P(y))
|                                     ,equal(x,y))))))
| by Simpset ['hol_to_nuprl'] THEN Simp THEN StrongAuto
|
1. 'a : S
⊢  (λp:'a→𝔹. b_exists_unique('a;x.p(x)))
|  =_b (λP:'a→𝔹. (∃_b x:'a. (P(x)))∧_2(∀_b x,y:'a.
|                                      ((P(x))∧_2(P(y)))⇒_2(x =_b y)))
| by Simpset ['ext'] THEN Simp THEN StrongAuto
|
1. 'a : S
⊢  (λp:'a→𝔹. b_exists_unique('a;x.p(x)))
   =
   (λP:'a→𝔹. (∃_b x:'a. (P(x)))∧_2(∀_b x,y:'a.
                                   ((P(x))∧_2(P(y)))⇒_2(x =_b y)))
  by Unab ['b_exists_unique'] THEN Simp THEN StrongAuto
END
```