```
not_cons_nil2  THM

⊢  ∀'a:S, t:'a List, h:'a. cons(h; t) = nil ⟺ False
| by RepeatFor 3 (Analyze 0 THENA Complete Auto)
|
1. 'a : S
2. t : 'a List
3. h : 'a
⊢  cons(h; t) = nil ⟺ False  by Analyze 0
|
|\
| 1. 'a : S
| 2. t : 'a List
| 3. h : 'a
| ⊢  cons(h; t) = nil ⇒ False
| | by InstLemma_o (ioid !oid{not_cons_nil:s}) []
| |
| 1. 'a : S
| 2. t : 'a List
| 3. h : 'a
| 4. ∀'a:S, t:'a List, h:'a. ¬cons(h; t) = nil
| ⊢  cons(h; t) = nil ⇒ False  by Fold `not` 0
| |
| 1. 'a : S
| 2. t : 'a List
| 3. h : 'a
| 4. ∀'a:S, t:'a List, h:'a. ¬cons(h; t) = nil
| ⊢  ¬cons(h; t) = nil  by BackThru -1
|
.\
. 1. 'a : S
. 2. t : 'a List
. 3. h : 'a
. ⊢  (cons(h; t) = nil) ⇐ False  by Auto
END
```