```
tl_append_back  THM

⊢  ∀l,m:T*. ||l|| = 0 ⇒ ||m||>0 ⇒ tl((l @ m)) = tl(m)  by UnivCD
|
1. T : Type
2. l : T*
3. m : T*
4. ||l|| = 0
5. ||m||>0
⊢  tl((l @ m)) = tl(m)  by ListInd 2
|
|\
| 4. ||m||>0
| ⊢  ||nil|| = 0 ⇒ tl((nil @ m)) = tl(m)  by Reduce 0
|
.\
. 4. ||m||>0
. 5. u : T
. 6. v : T*
. 7. ||v|| = 0 ⇒ tl((v @ m)) = tl(m)
. ⊢  ||u.v|| = 0 ⇒ tl(((u.v) @ m)) = tl(m)  by Analyze 0
. |
. 8. ||u.v|| = 0
. ⊢  tl(((u.v) @ m)) = tl(m)  by Reduce 8
END
```