```
l_all_map  THM

⊢  ∀A,B:Type, f:(A→B), L:A List, P:(B→Prop).
|  (∀x∈map(f;L).P(x)) ⟺ (∀x∈L.P(f(x)))
| by Unfold ‘l_all‘ 0 THEN RWO "member_map" 0 THEN Auto THEN ExRepD
|
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| 1. A : Type
| 2. B : Type
| 3. f : A→B
| 4. L : A List
| 5. P : B→Prop
| 6. ∀x:B. (∃y:A. (y ∈ L) & x = f(y)) ⇒ P(x)
| 7. x : A
| 8. (x ∈ L)
| ⊢  P(f(x))
|   by BackThruSomeHyp THEN Auto THEN InstConcl [x] THEN Auto
|
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. 1. A : Type
. 2. B : Type
. 3. f : A→B
. 4. L : A List
. 5. P : B→Prop
. 6. ∀x:A. (x ∈ L) ⇒ P(f(x))
. 7. x : B
. 8. y : A
. 9. (y ∈ L)
. 10. x = f(y)
. ⊢  P(x)
.   by HypSubst (-1) 0 THENA Auto THEN BackThruSomeHyp THEN Auto
END
```