```
lang_prod_functionality  THM

⊢  ∀L,L',M,M':LangOver(Alph). L = L' ⇒ M = M' ⇒ (L⊗M) = (L'⊗M')
| by Unfold ‘languages‘ 0 THEN Unfold ‘lang_prod‘ 0
|    THEN
|    Unfold ‘lang_eq‘ 0
|    THEN
|    UnivCD
|    THEN
|    Reduce 0
|
1. Alph : Type
2. L : Alph*→Prop
3. L' : Alph*→Prop
4. M : Alph*→Prop
5. M' : Alph*→Prop
6. ∀l:Alph*. L(l) ⟺ L'(l)
7. ∀l:Alph*. M(l) ⟺ M'(l)
8. l : Alph*
⊢  (∃i:{0...||l||}. L(l[0..i⁻]) & M(l[i..||l||⁻]))
   ⟺
   (∃i:{0...||l||}. L'(l[0..i⁻]) & M'(l[i..||l||⁻]))
  by RWH (HypC 6) 0 THEN RWH (HypC 7) 0
END
```