```
formula_and_left_falsifiable  THM

⊢  ∀concl,M,N:Formula List, q,r:Formula, a:Assignment.
|  a |≠ <[q; r/ M @ N],concl> ⟺ a |≠ <M @ (q⌈∧⌉r.N),concl>
| by UnivCD
|
1. concl : Formula List
2. M : Formula List
3. N : Formula List
4. q : Formula
5. r : Formula
6. a : Assignment
⊢  a |≠ <[q; r/ M @ N],concl> ⟺ a |≠ <M @ (q⌈∧⌉r.N),concl>
| by Rewrite
|    (UnfoldC ‘sequent_falsifiable‘ THENC AbReduceC
|     THENC
|     HigherC
|     (LemmaC
|      Thm* ∀P:(T→Prop), L,M:T List.
|           ∀x∈(L @ M).P(x) ⟺ ∀x∈L.P(x) & ∀x∈M.P(x)
|      {list_all_append_lemma})
|     THENC
|     AbReduceC
|     THENC
|     HigherC
|     (LemmaC
|      Thm* ∀a:Assignment, q,r:Formula.
|           a |= q⌈∧⌉r  ⟺ a |= q  & a |= r
|      {formula_and_sat_lemma}))
|    0
|
⊢  a |= q  & a |= r  & ∀F∈M.a |= F  & ∀F∈N.a |= F  & ∀F∈concl.a |≠ F
   ⟺
   ∀F∈M.a |= F  & a |= q  & a |= r  & ∀F∈N.a |= F  & ∀F∈concl.a |≠ F
  by Repeat (Analyze 0) THEN Analyze -1 THEN RepeatAndHD -2
     THEN
     Try Trivial
END
```