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%macro cyp2a6;

proc sort data=sdtm.lb(where=(lbcats='ENZYM ACTIVITY' and lbtestcd
in('TRANS3H' 'COTININE') AND LBSTAT NE 'NOT DONE') keep=usubjid visitnum
visit lbdtc lbcats lbstats lbtestcd lbstresn lbtp LBSTAT) out=lb_cyp;
    by usubjid visitnum visit lbdtc lbtestcd;
run;

proc transpose data=lb_cyp out=tlb_cyp;
    by usubjid visitnum visit lbdtc lbtp lbcats lbstats;
    var lbstresn;
    id lbtestcd;
run;

data cyp1;
    set tlb_cyp(drop=_name_ _label_);
    FORMAT CYP2A6 COT HCOT BEST32.;

    cyp2a6=ROUND(((trans3h*5.202)/(cotinine*5.675))*100,0.000000000000000
001);
    cyp2a6c=left(trim(put(/*round(*cyp2a6/*,0.01)*/*8.2*/BEST32.)));

    hcot=ROUND(trans3h*5.202,0.000000000000000001);
    hcotc=left(trim(put(/*round(*hcot/*,0.001)*/*8.3*/BEST32.)));
    cot=ROUND(cotinine*5.675,0.000000000000000001);
    cotc=left(trim(put(/*round(*cot/*,0.001)*/*8.3*/BEST32.)));
run;

proc transpose data=cyp1 out=cyp1a(rename=( _name_ =lbtestcd coll=aval));
    by usubjid visitnum visit lbdtc lbtp lbcats lbstats;
    var cyp2a6 hcot cot;
run;

proc transpose data=cyp1 out=cyp1b(rename=( _name_ =lbtestcd coll=avalc));
    by usubjid visitnum visit lbdtc lbtp lbcats lbstats;
    var cyp2a6c hcotc cotc;
run;

data cyp1c;
    set cyp1b;

    lbtestcd=tranwrd(lbtestcd,'CYP2A6C','CYP2A6');
    lbtestcd=tranwrd(lbtestcd,'HCOTC','HCOT');
    lbtestcd=tranwrd(lbtestcd,'COTC','COT');
run;

proc sort data=cyp1a;
    by usubjid visitnum visit lbdtc lbtp lbcats lbstats lbtestcd;
run;

proc sort data=cyp1c;
    by usubjid visitnum visit lbdtc lbtp lbcats lbstats lbtestcd;
run;

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data cyp2;  
  merge cyp1a cyp1c;  
  by usubjid visitnum visit lbdtc lbtpt lbcatt lbscat lbtestcd;  
run;  
  
%mend cyp2a6;
```