

```

options notes nosource;
proc datasets lib=work nolist memtype=data kill; quit;
* macro to save output and log to appropriate areas ;
%_mprintto;
%put NOTE:
=====;
%put NOTE: Covance Study Number : 000000106326;
%put NOTE: Client Protocol ID : ZRHM-PK-05-JP;
%put NOTE: Program Name : d_2ADBx.sas;
%put NOTE: Purpose : create ADBx dataset;
%put NOTE: ;
%put NOTE: Input Data : STDLIB.ADBx SDTM.LB SDTM.SUPPLB
ADAM.ADSL;
%put NOTE: Output : ADAM.ADBx;
%put NOTE: Macros Called : _MPRINTTO _MTOTPER _MPERALL _SCRAMBLE;
%put NOTE: ;
%put NOTE: Programmed by : cvn_kbooth;
%put NOTE: Creation Date : 2014-04-15;
%put NOTE: SAS Version : 9.3;
%put NOTE: ;
%put NOTE: == Latest Run
=====;
%put NOTE: Run by : &sysuserid;
%put NOTE: Date/Time :
%sysfunc(putn(%sysfunc(date()),e8601da.))T%sysfunc(putn(%sysfunc(time()),
e86011z.));
%put NOTE: ;
%put NOTE: == Modification History
=====;
%put NOTE: Date Initials No. Reason;
%put NOTE: 22Apr2014 KB 1) Given formats to AVALC ANL01FL
AVISITN ABLFL ANL02FL;
%put NOTE: 22Apr2014 KB 2) Amended dataset label;
%put NOTE: 04Aug2014 KB 3) Dropped ABLFL & EOE as no longer
required;
%put NOTE: 04Aug2014 KB 4) Added NICOGR2 & EXNOTRFL & EPOCH
variables to keep;
%put NOTE: 04Aug2014 KB 5) Amended format;
%put NOTE: 04Aug2014 KB 6) Amended error by removing variables
from keep;
%put NOTE: 04Aug2014 KB 7) Amended warning regarding lengths;
%put NOTE: 04Aug2014 KB 8) Removed format from LBSAMPLE &
amended formats of AVISITN and ATPTN;
%put NOTE: 04Aug2014 KB 9) Added DEVN;
%put NOTE: 04Aug2014 KB 10) Added units on to NOT DONE tests;
%put NOTE: 04Aug2014 KB 11) Amended PARCAT2;
%put NOTE: 07Aug2014 KB 12) Amended for AVAL/AVALC issue;
%put NOTE: 07Aug2014 KB 13) Amended variables if tests not
done;
%put NOTE: 07Aug2014 KB 14) Amended PARCAT2 for BLBALL;
%put NOTE: 08Aug2014 KB 15) Amended PARAM for missing units for
COHB;
%put NOTE: 08Aug2014 KB 16) Amended PARCAT2N for CYP data;
%put NOTE: 23Sep2014 KB 17) Amended DEVWC to add on 59 seconds;

```

```

%put NOTE: 23Sep2014    KB           18) Amended AWHI & AWRANGE for CYP
data;
%put NOTE: ;
%put NOTE:
=====;
options notes source source2 nofullstimer validvarname=upcase missing='
';
ods _all_ close;
ods listing;

*=====;
* START OF PROGRAM CODE                                     ;
*=====;

%cyp2a6;

*****;
* bring in ADSL ;
*****;

data adsl;
    set adam.adsl;
    keep studyid usubjid subjid: siteid age sex: race height weightb1
bmi ucpdgr1 ucpdgr1n nicogr1 nicogr1n NICOGR2 NICOGR2N targr1 targr1n /*
4) KB 04Aug2014 */
        enrfl scrffl complfl compl0fl compl1fl compl2fl compl3fl
saffl pprotfl randfl trt: trt01: tr01: trt02: tr02: dthfl enfl exfl
EXNOTRFL fupfl anal: DTESTDTM; /* 4) KB 04Aug2014 */ /* 18) KB 23Sep2014
*/
run;

*****;
* bring in SUPPLB ;
*****;

data supplb;
    set sdtm.supplb;
/*    attrib qval2 format=$2.;*/ /* 8) KB 04Aug2014 */

    qval2=qval;
    drop qval;
run;

proc transpose data=supplb out=supplb2(drop = _:);
    var qval2;
    by usubjid idvarval;
    id qnam;
    idlabel qlabel;
run;

data supplb3(drop = idvarval);
    set supplb2;
    lbseq = input(idvarval, best.);
run;

```

```

proc sort data=supplb3;
    by usubjid lbseq;
run;

*****;
* bring in LB    ;
*****;

*select relevant safety data only ;
proc sort data = sdtm.lb out = lb(where = (lbcatt in ('BIOMARKERS' 'ENZYME
ACTIVITY')));
    by usubjid lbseq;
run;

* check parameters and units to SAP;
* all original and standardised units match so only keep 1 set of data ;
proc sort data = lb out=lbchk(keep = lbcatt lbscatt lbtestcd lbtest
lborresu lbstresu) nodupkey;
    by lbcatt lbscatt lbtestcd lbtest lborresu lbstresu;
run;

* check for unscheduled observations;
proc sort data = lb(where = (index(upcase(visit),'UNSCHEDULED')) out =
uns nodupkey;
    by usubjid visitnum visit lbtpnt lbtpntnum lbdtc;
run;

data cyp2a;
    set cyp2;
    format lbstresn /*best.*/BEST32. /*lbstresc*/ /*$200.*//*$8.*/
lbtestcd $8. lbtest /*$40.*/$39. lbseq 8. paramtyp $20. dtype $10.; /* 7)
KB 04Aug2014 */ /* 12) KB 07Aug2014 */ /* 15) KB 08Aug2014 */

    if lbtestcd='CYP2A6' then do;
        lbstresn=aval;
/*        lbstresc=avalc;*/ /* 15) KB 08Aug2014 */
        lbtest='CYP2A6 Activity';
        lbseq=.;
        paramtyp='DERIVED';
        dtype='RATIO';
    end;
    else if lbtestcd='COT' THEN DO;
        lbstresn=aval;
/*        lbstresc=avalc;*/ /* 15) KB 08Aug2014 */
        lbtest='Cotinine';
        lbseq=.;
        paramtyp='DERIVED';
        dtype='FUNCTION';
    end;
    else if lbtestcd='HCOT' then do;
        lbstresn=aval;
/*        lbstresc=avalc;*/ /* 15) KB 08Aug2014 */
        lbtest="Trans-3'hydroxycotinine";

```

```

        lbseq=.;
        paramtyp='DERIVED';
        dtype='FUNCTION';
    end;

    RENAME AVALC=AVALC1; /* 15) KB 08Aug2014 */

    keep usubjid visitnum visit lbdtc lbtpt lbtest lbtestcd lbcat lbcat
    lbstresn /*lbstresc*/ AVALC paramtyp dtype; /* 15) KB 08Aug2014 */
run;

data lba;
    set lb cyp2a;
run;

proc sort data=lba;
    by usubjid lbseq;
run;

* combine with supplb ;
data lb2;
    merge lba(in = a) supplb3;
    by usubjid lbseq;
    if a;

    format paramcd $8. parcat1 parcat2 $80. avisit param avalcat1 $40.
    paramn parcat1n parcat2n 8. aval /*atptn AVISITN*/ /*best.*/BEST32. /*
    1) KB 22Apr2014 */ /* 8) KB 04Aug2014 */ /* 12) KB 07Aug2014 */
    /*avalc*/ anrind anrlo anrhi atpt $40. eoe AVISITN ATPTN 8. aeofl
    $2. AVALC $200. /* 1) KB 22Apr2014 */ /* 8) KB 04Aug2014 */
    adt date9. adtm datetime13. atm time5. bloqfl aulqfl aqlfl $2.
    avalu atoxgr $20.;

    * Parameter variables;
    if index(lbtest,'CYP2A6')=0 then do;
        param=propcase(lbtest);
    end;
    else do;
        param=left(trim(lbtest));
    end;
    paramcd=lbtestcd;
    parcat1=lbcat;
/*    parcat2=lbcat;*/
    if paramcd='TRANS3H' then param="Trans-3'hydroxycotinine";

    if parcat1='BIOMARKERS' and paramcd = 'LBALL' then do;
        param = strip(param) || ' ('||strip(parcat1)||)';
        paramcd = substr(parcat1,1,1)||strip(paramcd);
    end;

    IF PARAMCD IN ('CARBXHGB' 'CO' 'BLBALL') THEN PARCAT2='BIOMARKERS OF
    EXPOSURE'; /* 11) KB 04Aug2014 */ /* 14) KB 07Aug2014 */
    ELSE IF PARAMCD IN ('COT' 'COTININE' 'CYP2A6' 'HCOT' 'TRANS3H') THEN
    PARCAT2='CYTOCHROME 2A6'; /* 11) KB 04Aug2014 */

```

```

if paramcd='CO' then paramn=1;
else if paramcd='CARBXHGB' then paramn=2;
else if paramcd='COTININE' then paramn=3;
else if paramcd='TRANS3H' then paramn=4;
else if paramcd='CYP2A6' then paramn=5;
else if paramcd='BLBALL' then paramn=98;
else if paramcd='LBALL' then paramn=99;
else if paramcd='COT' then paramn=7;
else if paramcd='HCOT' then paramn=6;
else put "USER WA" "RNING: Check PARAMCDs " paramcd=;

if parcat1='BIOMARKERS' then parcat1n=1;
if parcat1='ENZYME ACTIVITY' then parcat1n=2;
if parcat2='BIOMARKERS OF EXPOSURE' then parcat2n=1;
if parcat2='CYTOCHROME 2A6' then parcat2n=/*1*/2; /* 16) KB
08Aug2014 */

    * analysis variables ;
    aval = lbstresn;
    IF AVALC1 EQ '' THEN DO; /* 15) KB 08Aug2014 */
        avalc = propcase(lbstresc, '.');
/* 15) START KB 08Aug2014 */
    END;
    ELSE DO;
        AVALC=AVALC1;
    END;
/* 15) END KB 08Aug2014 */
    if paramcd='COT' then avalu=strip('nmol/L');
    else if paramcd='HCOT' then avalu=strip('nmol/L');
    else if paramcd='CYP2A6' then avalu=strip('%');
    else avalu = strip(lbstresu);

/* 10) START KB 04Aug2014 */
    IF AVALU='' AND INDEX(PARAMCD,'LBALL')=0 THEN DO;
        IF PARAMCD='CO' THEN PARAM=STRIP(PARAM)||' (||STRIP('ppm')||)';
        ELSE IF PARAMCD='COTININE' THEN PARAM=STRIP(PARAM)||'
('||STRIP('ng/mL')||)';
        ELSE IF PARAMCD='TRANS3H' THEN PARAM=STRIP(PARAM)||'
('||STRIP('ng/mL')||)';
    END;
/* 10) END KB 04Aug2014 */

    if avalu ne '' then do;
        param=left(trim(param)) || ' (' || left(trim(avalu)) || ')';
    end;
    IF PARAMCD='CARBXHGB' AND AVALU='' THEN PARAM=STRIP(PARAM)||'
('||STRIP('%')||)'; /* 15) KB 08Aug2014 */

    if paramcd='CO' then do;
        if missing(aval) then avalcat1='';
        else if not missing(aval) and aval le 10 then avalcat1='<=10';
        else avalcat1='>10';
    end;

```

```

else if paramcd='CARBXHGB' then do;
    if missing(aval) then avalcat1='';
    else if not missing(aval) and aval le 2 then avalcat1='<=2';
    else avalcat1='>2';
end;

atoxgr=propcase(lbttoxgr);
anrind = strip(lbnrind);
if missing(lbstnrc) then anrlo = strip(lbstnrlo);
else if not missing(lbstnrc) then anrlo = strip(lbstnrc);
anrhi = strip(lbstnrhi);

*loq flags;
if index(lbstresc,'<') then do;
    bloqfl = 'Y';
    aval = 0.5 * input(scan(lbstresc,2),best.); * following
section 11.1.5 of SAP relating to biomarkers;
    aqlfl = 'Y';
end;
if index(lbstresc,'>') then do;
    aulqfl = 'Y';
    aval = input(scan(lbstresc,2),best.);
    aqlfl = 'Y';
end;

* visit details ;
avisit = propcase(visit);
avisitn = visitnum;

if avisit = 'Unscheduled 1.01' then do;
    avisit = 'Screening - unscheduled';
end;

/* Coding ATPT and ATPTN */
if index(lbtpt,'Within 15') then do;
    atpt='15 min < T0';
    atptn=0;
end;
else if index(lbtpt,'08:00') then do;
    atpt='08:00-09:30 AM';
    atptn=101;
end;
else if index(lbtpt,'12:00') then do;
    atpt='12:00-01:30 PM';
    atptn=102;
end;
else if index(lbtpt,'16:00') then do;
    atpt='04:00-05:30 PM';
    atptn=103;
end;
else if index(lbtpt,'20:00') then do;
    atpt='08:00-09:30 PM';
    atptn=104;
end;
end;

```

```

else if index(lbtpt,'15 MIN PRIOR') then do;
    atpt='15 min < T0';
    atptn=0;
end;
else if index(lbtpt,'15 MIN') then do;
    atpt='T0 + 15 min';
    atptn=6;
end;
else if index(lbtpt,'60 MIN') then do;
    atpt='T0 + 60 min';
    atptn=10;
end;
else if index(lbtpt,'4 HRS') then do;
    atpt='T0 + 4 h';
    atptn=12;
end;
else if index(lbtpt,'12 HRS') then do;
    atpt='T0 + 12 h';
    atptn=15;
end;
else if index(lbtpt,'DAY -1')=0 and index(lbtpt,'DAY 4')=0 then
    put "WARN" "ING: Check LBTPts for missing ATPTs " lbtpt=;

if upcase(index(avisit, 'UNSCH')) then do;
    atpt='';
    atptn=.;
end;

if index(atpt,'08:00-09:30 PM') or index(atpt,'T0 + 12 h') then do;
    aeofl='Y';
    eoe=aval;
end;

* dates;
if length(lbdtc) gt 10 then do;
/*      adtm = input(lbdtc,e8601dt.);*/
    ADTM =
DHMS(INPUT(SCAN(LBDTC,1,'T'),YYMMDD10.),HOUR(INPUT(SCAN(LBDTC,2,'T'),TIME
5.)),MINUTE(INPUT(SCAN(LBDTC,2,'T'),TIME5.)),0); /* 5) KB 04Aug2014 */
    adt = datepart(adtm);
    atm = timepart(adtm);
end;
else if length(lbdtc) = 10 then adt = input(lbdtc,yyymmdd10.);

keep usubjid lbseq param: parcat: aval: avisit: adt: atm lbstat
lbreasnd lbdtc lbdy atoxgr anrind
    anrlo anrhi lbfast bloqfl aulqfl atpt: epoch lbsample lbspec eoe
aeofl aqlfl /*lbendtc*/ dtype paramtyp EPOCH; /* 4) KB 04Aug2014 */
/* 6) KB 04Aug2014 */
run;

proc sort data = lb2;
    by usubjid paramn avisitn atptn;
run;

```

```

*****;
* Combine ADSL and BX data *;
*****;
* treatment period;
*_mtotper;

data sllb(drop = trt01: trt02: astday DTESTDTM); /* 18) KB 23Sep2014 */
    merge adsl lb2(in = a);
    by usubjid;
    if a;          * only include subjects with data ;
    format aperiod trtan trtpn aday astday  DEVN 8. trta trtp $40.
aperiodc $8. awlo awhi datetime16. pbase $2. awrange $50. devwc $10. /*
9) KB 04Aug2014 */
    ANL01FL $2.; /* 1) KB 22Apr2014 */
    aday = adt - trtsdt + 1;
    astday = adt - trtsdt + 1;
    if aday in (0 1) then aperiod=1;
    else if aday in (2 3) then aperiod=2;
    * allocate tretament and period;
    *_mperall(dvar1 = adtm, dvar2 = adt);

    if not missing(aperiod) then do;
        aperiodc = 'Period ' || put(aperiod,1.);
    end;

    if index(atpt,'08:00-09:30 AM') then do;
        awlo=dhms(adt,08,00,00);
        awhi=dhms(adt,09,30,00);
    end;
    else if index(atpt,'12:00-01:30 PM') then do;
        awlo=dhms(adt,12,00,00);
        awhi=dhms(adt,13,30,00);
    end;
    else if index(atpt,'04:00-05:30 PM') then do;
        awlo=dhms(adt,16,00,00);
        awhi=dhms(adt,17,30,00);
    end;
    else if index(atpt,'08:00-09:30 PM') then do;
        awlo=dhms(adt,20,00,00);
        awhi=dhms(adt,21,30,00);
    end;
    else if index(atpt,'15 min < T0') and index(avisit,'Day 1') then do;
        awlo=dhms(adt,hour(tr01stm),minute(tr01stm),second(tr01stm))-
dhms(0,0,15,0);
        awhi=dhms(adt,hour(tr01stm),minute(tr01stm),second(tr01stm));
    end;
    else if index(atpt,'15 min < T0') and index(avisit,'Day 3') then do;
        awlo=dhms(adt,hour(tr02stm),minute(tr02stm),second(tr02stm))-
dhms(0,0,15,0);
        awhi=dhms(adt,hour(tr02stm),minute(tr02stm),second(tr02stm));
    end;
    else if index(atpt,'T0 + 15 min') and index(avisit,'Day 1') then do;

```



```

awlo=dhms(adt,hour(tr01stm),minute(tr01stm),second(tr01stm))+dhms(0,0,15,
0);

awhi=dhms(adt,hour(tr01stm),minute(tr01stm),second(tr01stm))+dhms(0,0,17,
0);
    end;
    else if index(atpt,'T0 + 15 min') and index(avisit, 'Day 3') then do;

awlo=dhms(adt,hour(tr02stm),minute(tr02stm),second(tr02stm))+dhms(0,0,15,
0);

awhi=dhms(adt,hour(tr02stm),minute(tr02stm),second(tr02stm))+dhms(0,0,17,
0);
    end;
    else if index(atpt,'T0 + 60 min') and index(avisit,'Day 1') then do;

awlo=dhms(adt,hour(tr01stm),minute(tr01stm),second(tr01stm))+dhms(0,1,0,0
);

awhi=dhms(adt,hour(tr01stm),minute(tr01stm),second(tr01stm))+dhms(0,1,3,0
);
    end;
    else if index(atpt,'T0 + 60 min') and index(avisit, 'Day 3') then do;

awlo=dhms(adt,hour(tr02stm),minute(tr02stm),second(tr02stm))+dhms(0,1,0,0
);

awhi=dhms(adt,hour(tr02stm),minute(tr02stm),second(tr02stm))+dhms(0,1,3,0
);
    end;
    else if index(atpt,'T0 + 4 h') and index(avisit,'Day 1') then do;

awlo=dhms(adt,hour(tr01stm),minute(tr01stm),second(tr01stm))+dhms(0,4,0,0
);

awhi=dhms(adt,hour(tr01stm),minute(tr01stm),second(tr01stm))+dhms(0,4,5,0
);
    end;
    else if index(atpt,'T0 + 4 h') and index(avisit, 'Day 3') then do;

awlo=dhms(adt,hour(tr02stm),minute(tr02stm),second(tr02stm))+dhms(0,4,0,0
);

awhi=dhms(adt,hour(tr02stm),minute(tr02stm),second(tr02stm))+dhms(0,4,5,0
);
    end;
    else if index(atpt,'T0 + 12 h') and index(avisit,'Day 1') then do;

awlo=dhms(adt,hour(tr01stm),minute(tr01stm),second(tr01stm))+dhms(0,12,0,
0);

awhi=dhms(adt,hour(tr01stm),minute(tr01stm),second(tr01stm))+dhms(0,12,5,
0);

```

```

        end;
        else if index(atpt,'T0 + 12 h') and index(avisit, 'Day 3') then do;

awlo=dhms(adtm,hour(tr02stm),minute(tr02stm),second(tr02stm))+dhms(0,12,0,
0);

awhi=dhms(adtm,hour(tr02stm),minute(tr02stm),second(tr02stm))+dhms(0,12,5,
0);
        end;
/* 18) START KB 23Sep2014 */
        ELSE IF PARAMCD IN("CYP2A6" "COT" "HCOT") AND AVISIT = "Day -1" THEN
DO;
        AWHI = DTESTDTM;
        END;
/* 18) END KB 23Sep2014 */

        if not missing(awlo) and not missing(awhi) then do;
                awrange=left(trim((put(awlo,datetime16.) || ' - ' ||
put(awhi,datetime16.))));
        end;
/* 18) START KB 23Sep2014 */
        ELSE IF MISSING(AWLO) AND NOT MISSING(AWHI) THEN DO;
                AWRANGE=STRIP("<") || STRIP(PUT(AWHI,DATETIME16.));
        END;
/* 18) END KB 23Sep2014 */

        if not missing(adtm) and avisit='Day 1' then do;
                if adtm>tr01sdtm then pbase='Y';
                else pbase='';
        end;
        if not missing(adtm) and avisit='Day 3' then do;
                if adtm>tr02sdtm then pbase='Y';
                else pbase='';
        end;

        if awlo <= adtm <= awhi and (paramcd not in ('LBALL' 'BLBALL'
'COTININE' 'TRANS3H')) then anl01fl='Y';

        if lbstat ne 'NOT DONE' then do;
                if adtm<awlo then do;
                        devwc=compress(put(floor((adtm-awlo)/60),best.));
                end;
                else if adtm>awhi then do;
/*
                        devwc=compress(put(ceil((adtm-awhi)/60),best.));*/
                        DEVWC=COMPRESS(PUT(CEIL((ADTM+59-AWHI)/60),BEST.)); /* 17) KB
23Sep2014 */
                end;
        end;

        if not missing(devwc) then do;
                if index(devwc,'-')=0 then devwc=cats(cats('+',devwc),' min');
                else if index(devwc,'-') then devwc=cats(devwc,' min');
        end;

```

```

        IF NOT MISSING(AWLO) AND ADTM<AWLO then DEVN=(FLOOR((ADTM-AWLO)/60));
/* 9) KB 04Aug2014 */
        ELSE IF NOT MISSING(AWHI) AND ADTM+59>AWHI then DEVN=CEIL((ADTM+59-
AWHI)/60); /* 9) KB 04Aug2014 */

```

```
run;
```

```

proc sort data=sllb(where=(atpt='15 min < T0')) out=sllb2a;
  by usubjid paramcd avisitn avisit atptn adtm;
run;

```

```

data sllb2b;
  set sllb2a;
  by usubjid paramcd avisitn avisit atptn adtm;
  attrib ablf1 /*length*/FORMAT=$2.; /* 1) KB 22Apr2014 */

```

```

  if last.avisit then ablf1='Y';
run;

```

```

proc sort data=sllb;
  by usubjid paramcd avisitn avisit atptn adtm;
run;

```

```

data sllb2c;
  merge sllb(in=a) sllb2b;
  by usubjid paramcd avisitn avisit atptn adtm;
  if a;
run;

```

```

proc sort data=sllb2c;
  by usubjid paramcd avisit atpt;
run;

```

```

data sllb2;
  set sllb2c;
  by usubjid paramcd avisit atpt;
  FORMAT ANL02FL $2.; /* 1) KB 22Apr2014 */

```

```

  if first.atpt and upcase(index(avisit,'UNSCH'))=0 and paramcd ne
'LBALL' and paramcd ne 'BLBALL' then anl02fl='Y';
run;

```

```
/* 12) START KB 07Aug2014 */
```

```

DATA SLLB3;
  SET SLLB2;
  FORMAT AVAL2 BEST32.;

  IF INDEX(AVALC,'BLQ')=0 THEN DO;
    AVAL2=INPUT(AVALC,BEST32.);
  END;
  ELSE AVAL2=AVAL;

```

```

/* 13) KB 07Aug2014 */
  IF LBSTAT EQ 'NOT DONE' THEN DO;

```

```

        ANL01FL='';
        AWLO=.;
        AWHI=.;
        AWRANGE='';
        ANL02FL='';
        PBASE='';
    END;
/* 13) KB 07Aug2014 */

    RENAME AVAL2=AVAL;
    DROP AVAL;
RUN;

DATA TEST;
    SET SLLB3;
    IF INDEX(AVALC,'BLQ')=0 THEN DO;
        IF INPUT(AVALC,BEST32.) NE AVAL THEN OUTPUT;
    END;
RUN;
/* 12) END KB 07Aug2014 */

*****;
* create output dataset ;
*****;

options replace;

data adbx;
    set stdlib.adbx /*sllb2*/SLLB3; /* 12) KB 07Aug2014 */

    drop lbfast /*epoch*/ anrind anrlo anrhi aeofl atoxgr ABLFL EOE
AVALC1; /* 3) KB 04Aug2014 */ /* 4) KB 04Aug2014 */ /* 12) KB 08Aug2014
*/
run;

proc sort data = adbx out = adam.adbx(label = /*'Biomarker Analysis
Dataset'*/'Biomarker Exposure Analysis Dataset'); /* 2) KB 22Apr2014 */
    by usubjid avisitn parcat1 paramcd atptn adtm;
run;

options noreplace;
%_scramble(set=adbx, id=usubjid subjid subjidn age sex sexc sexn race
dthfl height weightbl bmi ucpdgr1 ucpdgrln nicogr1
        nicogrln targr1 targrln analgr1 analgrln, dates=devwc
awrange awlo awhi
        lbdtc /*lbendtc*/ lbdy adt adtm aday avisit avisitn atpt
atptn aperiod aperiodc, /* 6) KB 04Aug2014 */
        nullc=compl0fl compl1fl compl2fl compl3fl trtp trta
trtseqp trtseqa trtstmf tr01stmf tr02stmf, nulln=trtsdtm trtsdt trtsday
trtedtm trtedt trteday trtpn trtan trtseqpn trtseqan
        tr01sdt tr01stm tr01sdm tr01edt tr01etm tr01edtm tr02sdt
tr02stm tr02sdm tr02edt tr02etm tr02edtm,
        nullcc=11, nullnc=22);

```

```
proc printto; run;  
*=====;  
* END OF PROGRAM CODE;  
*=====;
```