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%_mprintto;
options notes nosource;
proc datasets lib=work nolist memtype=data kill; quit;
%put NOTE:
=====;
%put NOTE: Covance Study Number : 000000106326;
%put NOTE: Client Protocol ID   : ZRHM-PK-05-JP;
%put NOTE: Program Name        : f_pkconc2_1.sas;
%put NOTE: Purpose              : Figure of plasma nicotine
concentrations Group-2 upto 1hr;
%put NOTE: ;
%put NOTE: Input Data           : ADAM.ADPC;
%put NOTE: Output               : f_15_1_2_1_2_1(pkconc);
%put NOTE: Macros Called        : _MPRINTTO;
%put NOTE: ;
%put NOTE: Programmed by        : cvn_jhardman;
%put NOTE: Creation Date        : 2014-08-12;
%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: 13Aug2014    JMH        1) Added proc printto;
%put NOTE: 13Aug2014    JMH        2) Amended legend;
%put NOTE: 22Sep14     CK          3) Output excel files;
%put NOTE: 22Sep14     CK          4) move titles and footnotes outside of
graph area;
%put NOTE:
=====;
options notes source source2 nofullstimer validvarname=upcase missing='
';
ods _all_ close;
ods listing;

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

/* Standard - just change the number to match the listing you're working
on. Also change the letters in the*/
/* bracket, eg ccb = current cigarette brands. Make sure to do this at
the top of the code too. */
%let tflno=F_15_01_02_01_02_01(pkconc);

/* Standard - leave this */
%let TFL_Part=%scan(&_SASPROGRAMFILE,-3,%str(/));

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/* Standard - leave this */
data _null_;
    tmp="&TFL_Part";
    if tmp not in ("dev" "qc") then call symput("TFL_Part", "prod");
    call symput('TFLpath', compress("&_SASPROGRAMFILE", ""));
run;

/* Example of basic GTL syntax */
ods _all_ close;
%let temp=/cvn/projects/prj/development/000000106326/dev/macro/;

/* Ensure ODS listing, html etc is turned off to prevent */
/* temporary or junk image files being produced */
options notes source source2 nofullstimer validvarname=upcase
nonumber nodate orientation=portrait papersize=&p_pgsz missing=' ';
ods graphics on; /* As we are effectively using ODS graphics we need to
ensure that it is turned on */
ods graphics / height=18cm width=18cm noborder noscale; /* Removes border
around the image */
ods path reset;
/* please include styles template */
%include "&temp.figtmp.sas";

ods rtf toc_data
file="/cvn/projects/prj/data/000000106326/TFL/&TFL_Part/&tflno..rtf"
style=t106326_g startpage=yes headery=1440 footery=1440 ;

ods exclude all;

proc sort data = adam.adpc(where=(analgr1 = "Group-2" and paramcd='NIC'
and pprotfl ='Y' and pcstat ne 'NOT DONE' AND ANL01FL='Y')) out = adpc;
    by param avalu trtan trta atptn atpt;
run;

data gmean;
    set adpc;
    statval=aval;
    if statval>0 then ln_statval=log(statval);
    else if statval=0 then flag=1;
run;

proc sort data=gmean;
    by param avalu trtan trta pnomtime flag;
run;

proc means data=gmean alpha=0.05 noprint;
    output out=gmean1b mean=mean std=std1 lclm=lci1 uclm=uci1 nmiss=miss;
    var ln_statval;
    by param avalu trtan trta pnomtime;
run;

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proc means data=gmean(where=(flag=1)) noprint;
  output out=gmean1a(keep=param avalu trtan trta pnomtime flag)
  mean=mean;
  var ln_statval;
  by param avalu trtan trta pnomtime flag;
run;

data gmean1c;
  merge gmean1a gmean1b;
  by param avalu trtan trta pnomtime ;
run;

data gmean2;
  set gmean1c;
  if flag ne 1 then do;
    gmean=exp(mean);
    lclm=exp(lcil);
    uclm=exp(ucil);
  end;

  keep param avalu trtan trta gmean lclm uclm pnomtime miss;
run;

data pc01;
  set gmean2;
  timeh=pnomtime/60;

  if timeh gt 1 then delete;
run;

/* 3) START CK 22Sep2014 */
PROC SQL;
CREATE TABLE PC02 AS
SELECT PARAM, TRTA, TIMEH, GMEAN, LCLM, UCLM
FROM PC01;
QUIT;

PROC EXPORT
DATA=PC02
DBMS=XLSX
OUTFILE="/cvn/projects/prj/data/000000106326/TFL/&TFL_Part./&tflno..xlsx"
REPLACE;
SHEET=Sheet1;
/* 3) END CK 22Sep2014 */

proc format;
  value xaxis
    0="0"
    2="2"
    4="4"
    6="6"
    8="8"
    10="10"
    15="15"

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30="30"
45="45"
60="60";

run;

title;
footnote;

data paging; /* paging is derived normally as with RTF type TFL */

    set pc01 end=last;
    page = 1;
    if last then call symput("maxpage", compress(page));

run;

%macro graph();

%do i=1 %to &maxpage; /* paging can either be done through a do loop or
multiple macro calls */

    data plot;
        set paging;
        where page = &i;
        call symput("unit",strip(avalu));
    run;

    proc template;
        define statgraph splot /store = work.templat;
            begingraph /;
            /* 4) CK 22Sept14 */
/*            entrytitle halign=left "Figure 15.1.2.1.2.1 Nicotine Plasma
Concentration (&unit) Profiles Geometric Mean and 95% CI - Group-2 PK
Population" /; */
/*            entryfootnote halign=left " "; */
/*            entryfootnote halign=left "-----
Lower limit of quantification (0.2 ng/mL)"; */
/*            entryfootnote halign=left "Note: NRT gum = Nicotine
Replacement Therapy gum; THS = Tobacco Heating System."; */
/*            entryfootnote halign=left " "; */
/*            entryfootnote halign=left "Appendix 15.2.4.6"; */
/*            entryfootnote halign=left "Path: &TFLpath." halign=right
"(Page &i of &maxpage)"; */
/*            entryfootnote halign=left "Program Run: &sysdate
&sysuserid   Program Status: &status"; */

            layout lattice / columns=1 rows=2
columngutter=2px columndatarange=union rowdatarange=union;

            cell;

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                                layout overlay /
border=false xaxisopts=(tickvalueattrs=(size=9pt) linearopts=(
tickvaluelist=(0 2 4 6 8 10 15 30 45 60)) label="Time post-product
(minutes)" labelattrs=(size=10pt))

                                yaxisopts=(tickvalueattrs=(size=9pt)
linearopts=(tickvaluesequence=(start=0 end=12 increment=2) viewmin=0
viewmax=12) label="Nicotine (&unit)" labelattrs=(size=10pt))
cycleattrs=false;

                                referenceline
y=0.2 / lineattrs=(pattern=shortdash) ;
                                seriesplot x=pnomtime y=gmean / index=trtan
primary=true group=trta display=(markers) legendlabel="mean"
name=/*"series"*/ "SERIES1"; /* 2) JMH 13Aug2014 */
                                scatterplot x= pnomtime y=gmean / index=trtan
group=trta yerrorlower=lclm yerrorupper=uclm
                                legendlabel="mean" name="scatter" ;
                                endlayout;
                                endcell;
                                cell;
                                cellheader;
                                entry halign=left " ";
                                entry halign=left "Semi-logarithmic scale";
                                entry halign=left " ";
                                endcellheader;
                                layout overlay /

                                xaxisopts=(tickvalueattrs=(size=9pt) linearopts=(
                                tickvaluelist=(0
2 4 6 8 10 15 30 45 60))
                                label="Time
post-product (minutes)" labelattrs=(size=10pt))

                                yaxisopts=(type=log
                                label="Nicotine
(&unit)"
                                labelattrs=(size=10pt)
                                logopts=(tickintervalstyle=logexpand
viewmin=0.1 viewmax=100 base=10)
                                tickvalueattrs=(size=9pt))

                                cycleattrs=false;

                                referenceline
y=0.2 / lineattrs=(pattern=shortdash) ;
                                seriesplot x= pnomtime y=gmean / index=trtan
primary=true group=trta display=(markers) legendlabel="mean"
name="series";
                                scatterplot x=pnomtime y=gmean /
index=trtan primary=true group=trta legendlabel="mean" name="series";
                                endlayout;
                                endcell;
                                endlayout;

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        layout globallegend / type=column title=" " border=false;
        discretelegend /*"series"*/ "SERIES1"; /* 2) JMH 13Aug2014
*/
        endlayout;

        endgraph;
        end;
        run;

        ods select all;
        /* 4) START KB 22Sep2014 */
        ODS ESCAPECHAR='^';
        ODS RTF PREPAGE="^S={outputwidth=100% just=l font_size=12pt
font_weight=bold background=white foreground=black
font_face=arial}^R/RTF'\QL' Figure 15.1.2.1.2.1 Nicotine Plasma
Concentration (&unit) Profiles Geometric Mean and 95% CI - Group-2 PK
Population";
        /* 4) END KB 22Sep2014 */

        proc sgrender data=plot template=spplot; /* applies the above
template to the specified data */
            format pnomtime xaxis.;
        run;

        /* 4) START CK 22Sep2014 */
        ODS RTF TEXT="^S={outputwidth=100% just=l font_size=9pt background=white
foreground=black font_face=arial}^R/RTF'\QL'";
        ODS RTF TEXT="^S={outputwidth=100% just=l font_size=9pt background=white
foreground=black font_face=arial}^R/RTF'\QL'----- Lower limit of
quantification (0.2 ng/mL)";
        ODS RTF TEXT="^S={outputwidth=100% just=l font_size=9pt background=white
foreground=black font_face=arial}^R/RTF'\QL' Note: NRT gum = Nicotine
Replacement Therapy gum; THS = Tobacco Heating System.";
        ODS RTF TEXT="^S={outputwidth=100% just=l font_size=9pt background=white
foreground=black font_face=arial}^R/RTF'\QL'";
        ODS RTF TEXT="^S={outputwidth=100% just=l font_size=9pt background=white
foreground=black font_face=arial}^R/RTF'\QL' Appendix 15.2.4.6";
        ODS RTF TEXT="^S={outputwidth=100% just=l font_size=9pt background=white
foreground=black font_face=arial}^R/RTF'\QL' Path: &TFLpath.
(Page &i of &maxpage)";
        ODS RTF TEXT="^S={outputwidth=100% just=l font_size=9pt background=white
foreground=black font_face=arial}^R/RTF'\QL' Program Run: &sysdate
&sysuserid Program Status: &status";
        /* 4) END CK 22Sep2014 */

        %end;
        %mend graph;
        %graph;
        PROC PRINTTO; RUN; /* 1) JMH 13Aug2014 */

        ods exclude all;
        ods _all_ close;

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```
ods graphics / reset;
```