**Appendix Table E3. Studies reporting results on the reliability of platelet reactivity assays with unclear study designs**

| **Author**  **Year**  **Country**  **PMID** | **Assays evaluated**  **(agonist)**  **[brand name, manufacturer]** | **Results** |
| --- | --- | --- |
| Cuisset  2009{Cuisset, 2009 113 /id}  France  19761935 | LTA  (ADP 10 μmol/L)  [PAP4, Biodata Corporation, Wellcome, Paris, France] | COV of maximal intensity of aggregation (PAP4) = 6.5% |
| Cecchi  2009{Cecchi, 2009 114 /id}  Italy  19733708 | LTA  (ADP 10 μmol/L)  [APACT 4, Helena Laboratories, Milan, Italy] | Mean COV for ADP-induced aggregation = 6.8% |
| Paniccia  2009{Paniccia, 2009 127 /id}  Italy  19461090 | LTA  (ADP, 10 μmol/L)  [APACT-4004 aggregometer, LABiTec, Ahrensburg, Germany]  Impedance aggregometry  (ADP, 10 μmol/L)  [Multiplate analyzer, Dynabyte, Munich, Germany] | Mean COV for LTA (50 measurements) = 6.8% (ADP as agonist)  Mean COV (5 repeat measurements in an unspecified number of patients) = 6.2% (ADP as agonist) |
| Cuisset  2009{Cuisset, 2009 131 /id}  France  18990434 | LTA  (ADP 10 μmol/L)  [PAP4, Biodata Corporation, Wellcome, Paris, France] | COV of maximal intensity of platelet aggregation = 6.5% |
| Frere  2008{Frere, 2008 176 /id}  France  18394438 | LTA  (ADP 10 μmol/L)  [PAP4, Biodata Corporation, Wellcome, Paris, France] | COV of maximal intensity of platelet aggregation = 6.5% |
| Bonello  2008{Bonello, 2008 177 /id}  France  18387444 | VASP phosphorylation assay  (PGE1 ± ADP, concentration not reported)  [Platelet VASP kit, Diagnostica Stago, Asnieres, France]; using flow cytometry [EPICS XL cytometer, Beckman Coulter Inc., Fullerton, California] | Intra-assay COV was <5%; interassay coefficient of variation was <8% |
| Mani  2008{Mani, 2008 183 /id}  Germany  18223467 | LTA  (ADP 2μmol/L)  [Behring Coagulation Timer, BCT, Dade Behring, Dudingen, Switzerland] | Within-subject variation was 3.3% |
| Frere  2007{Frere, 2007 193 /id}  France  17938809 | LTA  (ADP 10 μM)  [PAP4 aggregometer, Biodata Corporation, Wellcome, Paris, France] | COV of maximal intensity of platelet aggregation = 6.5% |
| Cuisset  2007{Cuisset, 2007 196 /id}  France  17337040 | LTA  (ADP 10 μmol/L)  [PAP4 Aggregometer, Biodata Corporation, Wellcome, Paris, France] | COV of maximal intensity of platelet aggregation = 6.5% |
| Bonello  2007{Bonello, 2007 199 /id}  France  17488353 | VASP phosphorylation assay  (PGE1 ± ADP, concentration not reported)  [Platelet VASP kit, Biocytex, Marseille, France]; using flow cytometry [Coulter EpicsXL cytometer, no additional information reported] | Intra-assay COV <5%. |
| Cuisset  2007{Cuisset, 2007 203 /id}  France  17264949 | LTA  (ADP 10 μM)  [PAP4 Aggregometer, Biodata Corporation, Wellcome, Paris, France] | COV of maximal intensity of platelet aggregation = 6.5% |
| Cuisset  2006{Cuisset, 2006 212 /id}  France  16371119 | LTA  (ADP 10 μmol/L)  [PAP4 Aggregometer, Biodata Corporation, Wellcome, Paris, France] | COV of maximal intensity of platelet aggregation = 6.5% |
| Wang  2011{Wang, 2011 16 /id}  China  21538380 | VASP phosphorylation assay  (PGE1 ± ADP, concentration not reported)  [Platelet VASP kit, Becton Dickinson, Franklin Lakes, NJ]; using flow cytometry [Coulter Epics XL cytometer, FACSCalibur, Becton Dickinson, Franklin Lakes, NJ] | Intra-assay COV < 5%  Inter-assay COV < 8% |
| Gori  2008{Gori, 2008 151 /id}  Italy  19132241 | LTA  (ADP, 10 μmol/L)  [APACT-4, Helena Laboratories, Italy]  High shear platelet function  (collagen/ADP)  [PFA-100, Dade-Behring, Marburg, Germany] | COV for LTA (ADP) = 6.8%  COV for PFA-100 (collagen/ADP) = 9.3% |
| Neubauer  2011{Neubauer, 2011 28 /id}  Germany  21226927 | Impedance aggregometry  (ADP 5μM)  [Whole Blood Aggregometry, Model 590, Chrono-log Corporation, Havertown, PA] | “Results were reproducible with a variability <10%” |
| Armero  2010{Armero, 2010 59 /id}  France  20670107 | VASP phosphorylation assay  (PGE1 ± ADP, concentration not reported)  [Platelet VASP kit, Diagnostica Stago, Asnieres, France]; using flow cytometry [Coulter Epics XL cytometer, Beckman Coulter, Inc., Fullerton, CA] | Intra-assay COV <5%. |
| Neubauer  2010{Neubauer, 2010 71 /id}  Germany  20410834 | Impedance aggregometry  (ADP 5μmol/L)  [Model 590, Chrono-log Corporation, Havertown, PA] | Results were “reproducible with a variability <10%” |
| Madsen  2010{Madsen, 2010 79 /id}  Canada  20224050 | LTA  (ADP, 5 μM)  [Chrono-Log Lumi Aggregometer, model 810; Chrono-Log Corporation, no additional details provided] | Duplicate measurements were performed only for LTA (other tests were assessed in the study)  While patients were on clopidogrel (measurements within 1 d to 12 mo of drug initiation) the standard deviations between duplicate measurements of maximal aggregation and late aggregation were 3.0% and 3.3%, respectively. |
| Cuisset  2010{Cuisset, 2010 93 /id}  France  20142119 | LTA  (ADP 10 μmol/L)  [PAP4, Biodata Corporation, Wellcome, Paris, France] | COV of maximal platelet aggregation = 6.5% |
| Cuisset  2009{Cuisset, 2009 139 /id}  France  18499233 | LTA  (ADP 10 μmol/L)  [PAP4 Aggregometer, Biodata Corporation, Wellcome, Paris, France] | COV of maximal platelet aggregation = 6.5% |
| Lordkipanidze  2009{Lordkipanidze, 2009 110 /id}  Canada  19419755 | LTA  (ADP 5 and 20 μΜ)  [ChronoLog aggregometer 540 model, Havertown, PA] | Intra-assay variability for peak platelet aggregation ranged from 8.5% to 11.3% at baseline, and 12.1% to 12.9% post-clopidogrel  Intra-assay variability for late platelet aggregation ranged from 10.5% to 17.1% at baseline, and 16.6% to 17.5% post-clopidogrel |
| Paniccia  2010{Paniccia, 2010 69 /id}  Italy  20458439 | LTA  (ADP, 10 μM)  [APACT-4004 aggregometer, LABiTec, Ahrensburg, Germany]  Impedance aggregometry  (ADP, 10 μM final concentration)  [Multiplate analyzer, Dynabyte, Munich, Germany] | Mean COV for LTA = 4.8% (5 samples × 10 patients = 50 datapoints)  Mean COV of Multiplate analyzer based on 5 samples obtained from each of several subjects (exact number not reported) = 5.8% |
| Migliorini  2009{Migliorini, 2009 18297 /id}  Italy  19917884 | LTA  (ADP, 10 μmol/L)  [APACT4 aggregometer, Helena Laboratories, Milan, Italy] | COV of maximal percentage platelet aggregation = 6.8% |
| Gori  2008{Gori, 2008 18298 /id}  Italy  18718420 | LTA  (ADP, 10 μΜ)  [APACT4 aggregometer, Helena Laboratories, Milan, Italy] | COV of platelet aggregation (ADP) = 6.8% |
| Wilson  2009{Wilson, 2009 18299 /id}  UK  19786240 | Percentage of platelets binding fibrinogen  (ADP, 10-5 mol/L)  [using flow cytometry, Coulter Epics XL-MCL Flow Cytometer; Beckman Coulter Inc., Brea, CA] | Inter-assay COV = 5.7% |
| Cuisset  2006{Cuisset, 2006 18300 /id}  France  17010792 | LTA  (ADP 10 μmol/L)  [PAP4 Aggregometer, Biodata Corporation, Wellcome, Paris, France] | COV of maximal intensity of platelet aggregation = 6.5% |
| Huczek  2008{Huczek, 2008 18301 /id}  Poland  18301358 | High shear platelet function  (collagen/ADP)  [PFA-100, Dade-Behring, Marburg, Germany] | In “duplicate analyses”:  COV using the collagen/ADP cartridge = 9.5% |
| Patti  2011{Patti, 2011 18303 /id}  Italy  21256470 | Platelet agglutination assay  (ADP cartridges)  [VerifyNow P2Y12 assay, Accumetrics, San Diego, CA] | Repeat analyses in 25 patients (number of replicate samples NR)  Intra-assay variability = 2.0% ±1.1%  Intra-assay COV = 6% |
| Lee  2011{Lee, 2011 18305 /id}  S. Korea  21791883 | Platelet agglutination assay  (ADP cartridges)  [VerifyNow P2Y12 assay, Accumetrics, San Diego, CA] | Variability of the P2Y12 assay = 7.5% at “the authors institution” |
| Freynhofer  2011{Freynhofer, 2011 18308 /id}  Austria  21614416 | VASP phosphorylation assay  (PGE1 ± ADP, concentration not reported)  [Biocytex Inc, Marseille, France]; using flow cytometry [additional details NR] | Repeatability coefficient for PRI VASP = 6.6% |
| Marcucci  2007{Marcucci, 2007 18309 /id}  Italy  17555759 | LTA  (ADP 2 and 10 μM)  [APACT4 aggregometer, Helena Laboratories Italia s.p.a., Milan, Italy] | COV of LTA (ADP) = 6.8% |
| Pettersen  2011{Pettersen, 2011 18266 /id}  Norway  21426546 | VASP phosphorylation assay  (PGE1 ± ADP, concentration not reported)  [PLT VASP/P2Y12 assay, Biocytex, France]; using flow cytometry [FACS Calibur System, Becton Dickinson, Plymouth, UK]  Platelet agglutination assay  (ADP cartridges)  [VerifyNow P2Y12 assay, Accumetrics, San Diego, CA] | Intra-assay COV for VASP assay = 2.3%  Intra-assay COV for VerifyNow assay = 7% |
| Paniccia  2007{Paniccia, 2007 198 /id}  Italy  17723123 | LTA  (ADP, 2 μmol/L and 10 μmol/L)  [APACT-4 aggregometer, LABiTec, Ahrensburg, Germany] | Mean COV of LTA = 6.8% (5 measurements × 10 CAD patients (50 data-points) |
| Paniccia  2011{Paniccia, 2011 31 /id}  Italy  21192314 | LTA  (ADP, 2 μmol/L, 5 μmol/L, 10 μmol/L, and 20 μmol/L)  [APACT-4004 aggregometer, LABiTec, Ahrensburg, Germany] | 5 samples from each of 10 patients of the assessment of reliability:  Mean COV for LTA (ADP 2 μmol/L) = 6.8%  Mean COV for LTA (ADP 5 μmol/L) = 5.2%  Mean COV for LTA (ADP 10 μmol/L) = 2.7%  Mean COV for LTA (ADP 20 μmol/L) = 3.1% |
| Kalantzi  2012{Kalantzi, 2012 18310 /id}  Greece  21806493 | VASP phosphorylation assay  (PGE1 ± ADP, concentration not reported)  [BioCytex, Marseille, France]; using flow cytometry [FACS Calibur, Becton-Dickinson, San Jose, CA] | Intra-assay COV <5%; inter-assay COV <8% |
| Siller-Matula  2012{Siller-Matula, 2012 18311 /id}  Austria  22260716 | VASP phosphorylation assay  (PGE1 ± ADP, concentration not reported)  [BioCytex, Marseille, France]; using flow cytometry [FACS Calibur, BD biosciences, San Jose, CA] | COV for duplicate analysis = 5% |
| Park  2011{Park, 2011 18312 /id}  Korea  21880289  CROSS VERIFY | Platelet agglutination assay  (ADP cartridges)  [VerifyNow P2Y12 assay, Accumetrics, San Diego, CA] | COV = 7.5% “at the authors’ institution” |
| Lee  2011{Lee, 2011 18313 /id}  Korea  21857144  CILON-T | Platelet agglutination assay  (ADP cartridges)  [VerifyNow P2Y12 assay, Accumetrics, San Diego, CA] | COV = 7.5% “at the authors’ institution” |
| Park  2011{Park, 2012 18314 /id}  Korea  21129165  CROSS VERIFY | Platelet agglutination assay  (ADP cartridges)  [VerifyNow P2Y12 assay, Accumetrics, San Diego, CA] | COV = 7.5% “at the authors’ institution” |
| Meen  2012{Meen, 2012 18315 /id}  Norway  22724626 | LTA  (ADP, 10 μM)  [ChronoLog 500 VS, Havertown, PA]  Impedance aggregometry  (ADP, 10 μM)  [Multiplate analyzer, Dynabyte, Munich, Germany] | LTA COV = 8.2% “at the authors’ laboratory”  Multiplate COV = 5.7% “at the authors’ laboratory” |
| Chiu  2011{Chiu, 2011 18317 /id}  Taiwan  21925055 | High shear platelet function  (collagen/ADP cartridges)  [PFA-100, Dade-Behring, Marburg, Germany] | COV = 7.7% “at the authors’ laboratory” |
| Tsantes  2012{Tsantes, 2012 18272 /id}  Greece  22646492 | LTA  (ADP 10 μM)  [Biodata-PAP-4 aggregometer, Bio/  Data Corporation, Horsham, PA]  High shear platelet function  (PFA-100 ADP/PGE1 cartridges)  [INNOVANCE PFA P2Y, Siemens Healthcare Diagnostics  Products GmbH, Marburg, Germany]  Impedance aggregometry  (ADP 6.5 μM)  [Multiplate analyzer, Dynabyte Medical, Munich, Germany]  VASP phosphorylation assay  (PGE1 ± ADP, concentration not reported)  [PLT VASP/P2Y12 assay, Biocytex, Marseille, France]; using flow cytometry [Partec CyFlow ML, Partec GmbH, Munster, Germany] | *ICCs for repeat measurement*  ICC for VASP assay = 0.84 (95% CI 0.15, 0.97)  ICC for Multiplate analyzer = 0.94 (95% CI 0.68, 0.99)  ICC for INNOVANCE PFA-100 P2Y = 0.89 (95% CI 0.46, 0.98)  ICC for LTA = 0.90 (95% CI 0.47, 0.98)  COV for VASP assay = 2%  COV for Multiplate analyzer = 7.4%  COV for INNOVANCE PFA-100 P2Y = 11.9%  COV for LTA = 3.3% |
| Park  2011  S. Korea  21880289 | Platelet agglutination assay  (ADP cartridges)  [VerifyNow P2Y12 assay, Accumetrics, San Diego, CA] | COV = 7.5% “at the authors’ institution” |

COV = coefficient of variation; NA = not applicable; NR = not reported; PMID = PubMed identification number.